ERICH VON DÄNIKEN

IN SEARCH OF THE GODS

THREE VOLUMES IN ONE

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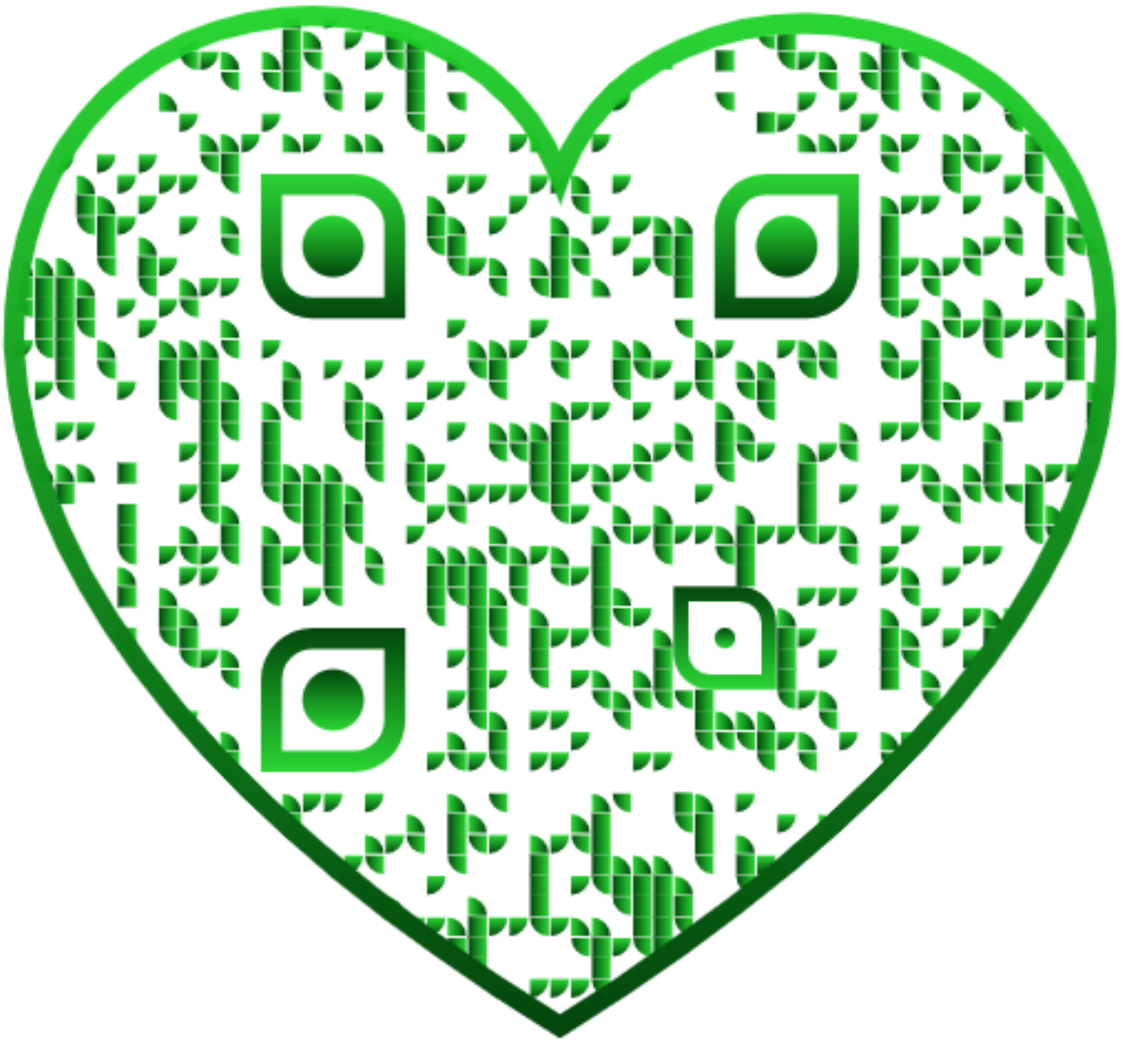

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Introduction

IT took courage to write this book, and it will take courage to read it. Because its theories and proofs do not fit into the mosaic of traditional archaeology, constructed so laboriously and firmly cemented down, scholars will call it nonsense and put it on the Index of those books which are better left unmentioned. Laymen will withdraw into the snail shell of their familiar world when faced with the probability that finding out about our past will be even more mysterious and adventurous than finding out about the future.

Nevertheless, one thing is certain. There is something inconsistent about our past, that past which lies thousands and millions of years behind us. The past teemed with unknown gods who visited the primeval earth in manned spaceships. Incredible technical achievements existed in the past. There is a mass of know-how which we have only partially rediscovered today.

There is something inconsistent about our archaeology! Because we find electric batteries many thousands of years old. Because we find strange beings in perfect space suits with platinum fasteners. Because we find numbers with fifteen

digits—something not registered by any computer. But how did these early men acquire the ability to create them?

There is something inconsistent about our religion. A feature common to every religion is that it promises help and salvation to mankind. The primitive gods gave such promises, too. Why didn't they keep them? Why did they use ultramodern weapons on primitive peoples? And why did they plan to destroy them?

Let us get used to the idea that the world of ideas which has grown up over the millennia is going to collapse. A few years of accurate research has already brought down the mental edifice in which we had made ourselves at home. Knowledge that was hidden in the libraries of secret societies is being rediscovered. The age of space travel is no longer an age of secrets. We have now landed on the moon. Space travel, which aspires to suns and stars, also plumbs the abysses of our past for us. Gods and priests, kings and heroes, emerge from the dark chasms. We must challenge them to deliver up their secrets, for we have the means to find out all about our past, without leaving any gaps, if we really want to.

Modern laboratories must take over the work of archaeological research. Archaeologists must visit the devastated sites of the past with ultrasensitive measuring apparatus. Priests who seek the truth must again begin to doubt everything that is established.

The gods of the dim past have left countless traces which we can read and decipher today for the first time because the problem of space travel, so topical today, was not a problem, but a reality, to the men of thousands of years ago. I claim that our forefathers received visits from the universe in the remote past, even though I do not yet know who these extraterrestrial intelligences were or from which planet they came. I nevertheless proclaim that these "strangers" annihilated part of mankind existing at the time and produced a new, perhaps the first, *homo sapiens*.

This assertion is revolutionary. It shatters the base on which a mental edifice that seemed to be so perfect was constructed. It is my aim to try to provide proof of this assertion.

My book would not have been written without the encouragement and collaboration of many people. I should like to thank my wife, who has seen little of me at home during the last few years, for her understanding. I should like to thank my friend Hans Neuner, my traveling companion for many thousands of miles, for his unfailing and valuable help. I should like to thank Dr. Stehlin and Louis Emrich for their continuous support. I should like to thank all the NASA personnel at Houston, Cape Kennedy, and Huntsville who showed me around their magnificent scientific and technical research centers. I should like to thank Wernher von Braun, Willy Ley, and Bert Slattery. I should like to thank all the countless men and women around the globe whose practical help, encouragement, and conversation made this book possible.

ERICH VON DÄNIKEN

CHARIOTS OF THE GODS?

I

Are There Intelligent Beings in the Cosmos?

IS it conceivable that we world citizens of the twentieth century are not the only living beings of our kind in the cosmos? Because no homunculus from another planet is on display in a museum for us to visit, the answer, "Our earth is the only planet with human beings," still seems to be legitimate and convincing. But the forest of question marks grows and grows as soon as we make a careful study of the facts resulting from the latest discoveries and research work.

On a clear night the naked eye can see about 4,500 stars, so the astronomers say. The telescope of even a small observatory makes nearly 2,000,000 stars visible, and a modern reflecting telescope brings the light from thousands of millions more to the viewer—specks of light in the Milky Way. But in the colossal dimensions of the cosmos our stellar system is only a tiny part of an incomparably larger stellar system—of a cluster of Milky Ways, one might say, containing some twenty galaxies within a radius of 1,500,000 light-years (1 light-year = the distance traveled by light in a year, *i.e.*, 186,000×60×60×24×365 miles). And even this vast number of stars is small in comparison with the many thousands of

spiral nebulae disclosed by the electronic telescope. Disclosed to the present day, I should emphasize, for research of this kind is only just beginning.

Astronomer Harlow Shapley estimates that there are some 10^{20} stars within the range of our telescopes. When Shapley associates a planetary system with only one in a thousand stars, we may assume that it is a very cautious estimate. If we continue to speculate on the basis of this estimate and suspect the necessary conditions for life on only one star in a thousand, this calculation still gives a figure of 10^{14}. Shapley asks: How many stars in this truly "astronomical" figure have an atmosphere suitable for life? One in a thousand? That would still leave the incredible figure of 10^{11} stars with the prerequisites for life. Even if we assume that only every thousandth planet out of this figure has produced life, there are still 100,000,000 planets on which we can speculate that life exists. This calculation is based on telescopes using the techniques available today, but we must not forget that these are constantly being improved.

If we follow the hypothesis of biochemist Dr. Stanley Miller, life and the conditions essential for life may have developed more quickly on some of these planets than on earth. If we accept this daring assumption, civilizations more advanced than our own could have developed on 100,000 planets.

The late Willy Ley, well-known scientific writer, and friend of Wernher von Braun, told me in New York: "The estimated number of stars in our Milky Way alone amounts to 30 billion. The assumption that our Milky Way contains at least 16 billion planetary systems is considered admissible by present-day astronomers. If we now try to reduce the figures in question as much as possible and assume that the distances between planetary systems are so regulated that only in one case in a hundred does a planet orbit in the ecosphere of its own sun, that still leaves 180 mil-

lion planets capable of supporting life. If we further assume that only one planet in a hundred that might support life actually does so, we should still have the figure of 1.8 million planets with life. Let us further suppose that out of every hundred planets with life there is one on which creatures with the same level of intelligence as *homo sapiens* live. Then even this last supposition gives our Milky Way the vast number of 18,000 inhabited planets."

Since the latest counts give 100 billion fixed stars in our Milky Way, probability indicates an incomparably higher figure than Dr. Ley puts forward in his cautious calculation.

Without quoting fantastic figures or taking unknown galaxies into account, we may surmise that there are 18,000 planets comparatively close to the earth with conditions essential to life similar to those of our own planet. Yet we can go even further and speculate that if only 1 percent of these 18,000 planets were actually inhabited, there would still be 180 left!

There is no doubt about the existence of planets similar to the earth—with a similar mixture of atmospheric gases, similar gravity, similar flora, and possibly even similar fauna. But is it even essential for the planets that support life to have conditions similar to the earth's?

The idea that life can flourish only under terrestrial conditions has been made obsolete by research. It is a mistake to believe that life cannot exist without water and oxygen. Even on our own earth there are forms of life that need no oxygen. They are called anaerobic bacteria. A given amount of oxygen acts like poison on them. Why should there not be higher forms of life that do not need oxygen?

Under the pressure of the new knowledge that is being acquired every day, we shall have to bring our mental world picture up to date. Scientific investigation, concentrated on our earth until very recently, has praised this world of ours as the ideal planet. It is not too hot and not too cold; it has

plenty of water; there are unlimited quantities of oxygen; organic processes constantly rejuvenate nature.

In fact, the assumption that life can exist and develop only on a planet like the earth is untenable. It is estimated that 2,000,000 different species of living creatures live on the earth. Of these—this again is an estimate—1,200,000 are "known" scientifically. And among these forms of life known to science there are still a few thousand that ought not to be able to live at all according to current ideas! The premises for life must be thought out and tested anew.

For example, one would think that highly radioactive water would be free from germs. But there are actually some kinds of bacteria which can adapt themselves to the lethal water that surrounds nuclear reactors. An experiment carried out by biologist Dr. Sanford Siegel sounds eery. He re-created the atmospheric conditions of Jupiter in his laboratory and bred bacteria and mites in this atmosphere, which shares none of the prerequisites we have hitherto laid down for "life." Ammonia, methane, and hydrogen did not kill them. The experiments by Dr. Howard Hinton and Dr. Blum, Bristol University entomologists, had equally startling results. The two scientists dried a species of midge for several hours at a temperature of 100° C. Immediately afterward they immersed their "guinea pigs" in liquid helium, which, as is well known, is as cold as space. After heavy irradiation they returned the midges to their normal living conditions. The insects continued their biological vital functions and produced perfectly healthy midges. We also know of bacteria that live in volcanoes, of others that eat stone, and some that produce iron. The forest of question marks grows.

Experiments are going on at many research centers. New proofs that life is by no means bound to the prerequisites for life on our planet are constantly accumulating. For centuries the world appeared to revolve around the laws and

conditions that govern life on earth. This conviction distorted and blurred our way of looking at things; it put blinkers on scientific investigators, who unhesitatingly accepted our standards and systems of thought when viewing the universe. Teilhard de Chardin, the epoch-making thinker, suggested that only the fantastic has a chance of being real in the cosmos!

If our way of thinking worked the other way around, it would mean that intelligences on another planet took *their* living conditions as a criterion. If they lived at temperatures of minus 150–200° C, they would think that those temperatures, which are destructive to life as we know it, were essential for life on other planets. That would match up to the logic with which we are trying to illuminate the darkness of our past.

We owe it to our self-respect to be rational and objective. At some time or other every daring theory seemed to be a Utopia. How many Utopias have long since become everyday realities! Of course the examples given here are meant to point out the most farfetched possibilities. Yet once the improbable things that we cannot even conceive of today are shown to be true, as they will be, barriers will fall, allowing free access to the impossibilities the cosmos still conceals. Future generations will find all kinds of life that have never been dreamed of in the universe. Even if we are not there to see it, they will have to accept the fact that they are not the only, and certainly not the oldest, intelligences in the cosmos.

The universe is estimated to be between eight and twelve billion years old. Meteorites bring traces of organic matter under our microscopes. Bacteria millions of years old awake to new life. Floating spores traverse the universe and at some time or other are captured by the gravitational field of a planet. New life has gone on developing in the perpetual cycle of creation for millions of years. Innumerable careful

examinations of all kinds of stones in all parts of the world prove that the earth's crust was formed about 4,000,000,000 years ago. Yes, and all that science knows is that something like man existed 1,000,000 years ago! And out of that gigantic river of time it has managed to dam up only a tiny rivulet of 7,000 years of human history, at the cost of a lot of hard work, many adventures and a great deal of curiosity. But what are 7,000 years of human history compared with thousands of millions of years of the history of the universe?

We—the paragons of creation?—took 400,000 years to reach our present state and our present stature. Who can produce concrete proof to show why another planet should not have provided more favorable conditions for the development of other or similar intelligences? Is there any reason why we may not have "competitors" on another planet who are equal or superior to us? Are we entitled to discard this possibility? We have done so up to the present.

How often the pillars of our wisdom have crumbled into dust! Hundreds and hundreds of generations thought that the earth was flat. The iron law that the sun went around the earth held good for thousands of years. We are still convinced that our earth is the center of everything, although it has been proved that the earth is an ordinary star of insignificant size, 30,000 light-years from the center of the Milky Way.

The time has come for us to admit our insignificance by making discoveries in the infinite unexplored cosmos. Only then shall we realize that we are nothing but ants in the vast state of the universe. And yet our future and our opportunities lie in the universe, where the gods promised they would.

Not until we have taken a look into the future shall we be strong and bold enough to investigate our past honestly and impartially.

2

When Our Spaceship Landed on Earth . . .

JULES VERNE, the grandfather of all science-fiction novelists, has become an accepted writer. His fantasies are no longer science fiction, and the astronauts of our day travel around the world in 86 minutes, not 80 days. We are now going to describe what might happen on an imaginary journey by spaceship, yet this imaginary journey will become possible in fewer decades than the time it took to contract Jules Verne's crazy notion of a journey around the world in 80 days to a lightning journey of 86 minutes. But let us not think in terms of such short periods of time! Let us assume that our spaceship will leave the earth for an unknown distant sun in 150 years' time.

The spaceship would be as big as a present-day ocean liner and would therefore have a launching weight of about 100,000 tons with a fuel load of 99,800 tons, *i.e,* an effective payload of 200 tons.

Impossible?

Already we could assemble a spaceship piece by piece while in orbit around a planet. Yet even this assembly work will become unnecessary in less than two decades, because

it will be possible to prepare the giant spaceship for launching on the moon. Besides, the basic research for the rocket propulsion of tomorrow is in full swing. Future rocket motors will mainly be powered by nuclear fusion and travel at nearly the speed of light. A bold new method, the feasibility of which has already been shown by physical experiments on individual elementary particles, will be the photon rocket. The fuel carried on board the photon rocket enables the rocket's velocity to approach so close to the speed of light that the effects of relativity, especially the variation in time between launching site and spaceship, can operate to the full. The fuel supplies will be transformed into electromagnetic radiation and ejected as a clustered propulsive jet with the speed of light. Theroetically a spaceship equipped with photon propulsion can reach 99 percent of the speed of light. At this speed the boundaries of our solar system would be blasted open!

An idea that really makes the mind reel. But we who are on the threshold of a new age should remember that the giant strides in technology which our grandfathers experienced were just as staggering in their day: the railways, electricity, telegraphy, the first car, the first airplane. We ourselves heard music in the air for the first time; we see color TV; we saw the first launching of spaceships, and American astronauts actually walking on the moon; and we get news and pictures from satellites that revolve around the earth. Our children's children will go on interstellar journeys and carry out cosmic research in the universities.

Let us follow the journey of our imaginary spaceship, whose goal is a distant fixed star. It would certainly be amusing to try to imagine what the crew of the spaceship did to kill time on their journey. Because however vast the distances they covered and however slowly time might crawl along for those left behind on earth, Einstein's theory of relativity still holds good. It may sound incredible, but time on

board the spaceship traveling barely below the speed of light actually passes more slowly than on the earth.

For example, only 10 years pass for our crew on their flight in the universe, whereas 108 years go by for those who stay at home. This shift in time between the space travelers and the people on earth can be calculated by the basic rocket equation worked out by Professor Ackeret:

$$v/w \frac{1 - (1 - t)^{2w/c}}{wc \cdot 11 + (1 - t)^{2w/c} 1}$$

(v = velocity, w = speed of jet, c = speed of light, t = fuel load at launching)

At the moment when our spaceship is approaching the star which is its target, the crew will undoubtedly examine planets, fix their position, undertake spectral analyses, measure forces of gravity, and calculate orbits. Lastly they will choose as landing place the planet whose conditions come closest to those of our earth. If our spaceship consists solely of its payload after a journey of, shall we say, 80 light-years, because all the energy supplies have been used up, the crew will have to replenish the tanks of their spacecraft with fissionable material at their goal.

Let us assume, then, that the planet chosen to land on is similar to the earth. I have already said that this assumption is by no means impossible. Let us also venture the supposition that the civilization of the planet visited is in about the same state of development as the earth was 8,000 years ago. Of course, this would all have been confirmed by the instruments on board the spaceship long before the landing. Naturally our space travelers have also picked on a landing site that lies close to a supply of fissionable matter. Their instruments show quickly and reliably in which mountain ranges uranium can be found.

The landing is carried out according to plan.

Our space travelers see beings making stone tools; they see them hunting and killing game by throwing spears; flocks of sheep and goats are grazing on the steppe; primitive potters are making simple household utensils. A strange sight to greet our astronauts!

But what do the primitive beings on this planet think about the monstrosity that has just landed there and the figures that climbed out of it? Let us not forget that we too were semisavages 8,000 years ago. So it is not surprising when the semisavages who experience this event bury their faces in the ground and dare not raise their eyes. Until this day they have worshiped the sun and the moon. And now something earth-shaking has happened: the gods have come down from heaven!

From a safe hiding place the inhabitants of the planet watch our space travelers, who wear strange hats with rods on their heads (helmets with antennae); they are amazed when the night is made bright as day (searchlights); they are terrified when the strangers rise effortlessly into the air (rocket belts); they bury their heads in the ground again when weird unknown "animals" soar in the air, droning, buzzing, and snorting (helicopters, all-purpose vehicles), and lastly they take flight to the safe refuge of their caves when a frightening boom and rumble resounds from the mountains (a trial explosion). Undoubtedly our astronauts must seem like almighty gods to these primitive people!

Day by day the space travelers continue their laborious work, and after some time a delegation of priests or medicine men will probably approach the astronauts in order to make contact with the gods. They bring gifts to pay homage to their guests. It is conceivable that our spacemen will rapidly learn the language of the inhabitants with the help of a computer and can thank them for the courtesy shown. Yet although they can explain to the savages in their own lan-

guage that no gods have landed, that no higher beings worthy of adoration have paid a visit, it has no effect. Our primitive friends simply do not believe it. The space travelers came from other stars; they obviously have tremendous power and the ability to perform miracles. They must be gods! There is also no point in the spacemen's trying to explain any help they may offer. It is all far beyond the comprehension of these people who have been so terrifyingly invaded.

Although it is impossible to imagine all the things that might take place from the day of landing onward, the following points might well figure on a preconceived plan:

Part of the population would be won over and trained to help search a crater formed by an explosion for fissionable matter needed for the return to earth.

The most intelligent of the inhabitants would be elected "king." As a visible sign of his power, he would be given a radio set through which he could contact and address the "gods" at any time.

Our astronauts would try to teach the natives the simplest forms of civilization and some moral concepts, in order to make the development of a social order possible. A few specially selected women would be fertilized by the astronauts. Thus a new race would arise that skipped a stage in natural evolution.

We know from our own development how long it would take before this new race became space experts. Consequently, before the astronauts began their return flight to earth, they would leave behind clear and visible signs which only a highly technical, mathematically based society would be able to understand much, much later.

Any attempt to warn our protégés of dangers in store would have little chance of success. Even if we showed them the most horrifying films of terrestrial wars and atomic explosions, it would not prevent the beings living on this

planet from committing the same follies any more than it now stops (almost) the whole of sentient humanity from constantly playing with the burning flame of war.

While our spaceship disappears again into the mists of the universe, our friends will talk about the miracle—"The gods were here!" They will translate it into their simple language and turn it into a saga to be handed down to their sons and daughters. They will turn the presents and implements and everything that the space travelers left behind into holy relics.

If our friends have mastered writing, they may make a record of what happened: uncanny, weird, miraculous. Then their texts will relate—and drawings will show—that gods in golden clothes were there in a flying boat that landed with a tremendous din. They will write about chariots which the gods drove over land and sea, and of terrifying weapons that were like lightning, and they will recount that the gods promised to return.

They will hammer and chisel in the rock pictures of what they had once seen: shapeless giants with helmets and rods on their heads, carrying boxes in front of their chests; balls on which indefinable beings sit and ride through the air; staves from which rays are shot out as if from a sun; strange shapes, resembling giant insects, which were vehicles of some sort.

There are no limits to the fantasy of the illustrations that result from the visit of our spaceship. We shall see later what traces the "gods" who visited the earth in our remote antiquity engraved on the tablets of the past.

It is quite easy to sketch the subsequent development of the planet that our spaceship visited. The inhabitants have learned a lot by watching the "gods" surreptitiously; the place on which the spaceship stood will be declared holy ground, a place of pilgrimage, where the heroic deeds of the gods will be praised in song. Pyramids and temples will be

built on it—in accordance with astronomic laws, of course. The population increases, wars devastate the place of the gods, and then come generations who rediscover and excavate the holy places and try to interpret the signs.

This is the stage we have reached. Now that we have landed men on the moon, we can open our minds to space travel. We know the effect the sudden arrival of a large ocean-going sailing vessel had on primitive people in, for example, the South Sea Islands. We know the devastating effect a man like Cortés, from another civilization, had on South America. So then we can appreciate, if only dimly, the fantastic impact the arrival of spacecraft would have made in prehistoric times.

We must now take another look at the forest of question marks—the array of unexplained mysteries. Do they make sense as the remains of prehistoric space travelers? Do they lead us into our past and yet link up with our plans for the future?

3

The Improbable World of the Unexplained

OUR historical past is pieced together from indirect knowledge. Excavations, old texts, cave drawings, legends, and so forth were used to construct a working hypothesis. From all this material an impressive and interesting mosaic was made, but it was the product of a preconceived pattern of thought into which the parts could always be fitted, though often with cement that was all too visible. An event must have happened in such and such a way. In that way and no other. And lo and behold—if that's what the scholars really want—it did happen in that way. We are entitled, indeed we ought, to doubt every accepted pattern of thought or working hypothesis, for if existing ideas are not called in question, research is at an end. So our historical past is only relatively true. If new aspects of it turn up, the old working hypothesis, however familiar it may have become, must be replaced by a new one. It seems the moment has come to introduce a new working hypothesis and place it at the very center of our research into the past.

New knowledge about the solar system and the universe, about macrocosm and microcosm, tremendous advances in technology and medicine, in biology and geology, the be-

ginning of space travel—these and many other things have completely altered our world picture in fewer than fifty years.

Today we know that it is possible to make space suits that can withstand extremes of heat and cold. Today we know that space travel is no longer a Utopian idea. We are familiar with the miracle of color television, just as we can measure the speed of light and calculate the consequences of the theory of relativity.

Our world picture, which is already almost frozen into immobility, begins to thaw. New working hypotheses need new criteria. For example, in the future, archaeology can no longer be simply a matter of excavation. The mere collection and classification of finds is no longer adequate. Other branches of science will have to be consulted and made use of if a reliable picture of our past is to be drawn.

So let us enter the new world of the improbable with an open mind and bursting with curiosity! Let us try to take possession of the inheritance the "gods" have bequeathed to us.

At the beginning of the eighteenth century ancient maps which had belonged to an officer in the Turkish navy, Admiral Piri Reis, were found in the Topkapi Palace. Two atlases preserved in the Berlin State Library which contain exact reproductions of the Mediterranean and the region around the Dead Sea also came from Piri Reis.

All these maps were handed over to American cartographer Arlington H. Mallerey for examination. Mallerey confirmed the remarkable fact that all the geographical data were present but not drawn in the right places. He sought the help of Mr. Walters, cartographer in the U.S. Navy Hydrographic Bureau. Mallerey and Walters constructed a grid and transferred the maps to a modern globe. They made a sensational discovery. The maps were absolutely accurate—and not only as regards the Mediterranean and the Dead Sea. The coasts of North and South America and even the

contours of the Antarctic were also precisely delineated on Piri Reis' maps. The maps not only reproduced the outlines of the continents but also showed the topography of the interiors! Mountain ranges, mountain peaks, islands, rivers, and plateaus were drawn in with extreme accuracy.

In 1957, the Geophysical Year, the maps were handed over to Jesuit Father Lineham, who is both director of the Weston Observatory and a cartographer in the U.S. Navy. After scrupulous tests Father Lineham, too, could but confirm that the maps were fantastically accurate—even about regions which we have scarcely explored today. What is more, the mountain ranges in the Antarctic, which already figure on Reis' maps, were not discovered until 1952. They have been covered in ice for hundreds of years, and our present-day maps have been drawn with the aid of echo-sounding apparatus.

The latest studies of Professor Charles H. Hapgood and mathematician Richard W. Strachan give us some more shattering information. Comparison with modern photographs of our globe taken from satellites showed that the originals of Piri Reis' maps must have been aerial photographs taken from a very great height. How can that be explained?

A spaceship hovers high above Cairo and points its camera straight downward. When the film is developed, the following picture would emerge: everything that is in a radius of about 5,000 miles of Cairo is reproduced correctly, because it lies directly below the lens. But the countries and continents become increasingy distorted the farther we move our eyes from the center of the picture.

Why is this?

Owing to the spherical shape of the earth, the continents away from the center "sink downward." South America, for example, appears strangely distorted lengthways, exactly as it does on the Piri Reis maps! And exactly as it does on the photographs taken from the American lunar probes.

There are one or two questions that can be answered

quickly. Unquestionably our forefathers did not draw these maps. Yet there is no doubt that the maps must have been made with the most modern technical aid—from the air.

How are we to explain that? Should we be satisfied with the legend that a god gave them to a high priest? Or should we simply take no notice of them and pooh-pooh the "miracle" because the maps do not fit into our mental world picture? Or should we boldly stir up a wasps' nest and claim that this cartography of our globe was carried out from a high-flying aircraft or from a spaceship?

Admittedly the Turkish admiral's maps are not originals. They are copies of copies of copies. Yet even if the maps dated from only the eighteenth century, when they were found, these facts are just as unexplainable. Whoever made them must have been able to fly and also to take photographs!

Not far from the sea, in the Peruvian spurs of the Andes, lies the ancient city of Nazca. The Palpa Valley contains a strip of level ground some 37 miles long and 1 mile wide that is scattered with bits of stone resembling pieces of rusty iron. The inhabitants call this region pampa, although any vegetation is out of the question there. If you fly over this territory—the plain of Nazca—you can make out gigantic lines, laid out geometrically, some of which run parallel to each other, while others intersect or are surrounded by large trapezoidal areas.

The archaeologists say that they are Inca roads.

A preposterous idea! Of what use to the Incas were roads that ran parallel to each other? That intersected? That were laid out in a plain and came to a sudden end?

Naturally typical Nazca pottery and ceramics are found here, too. But it is surely oversimplifying things to attribute the geometrically arranged lines to the Nazca culture for that reason alone.

No serious excavations were carried out in this area until

1952. There is no established chronology for all the things that were found. Only now have the lines and geometrical figures been measured. The results clearly confirm the hypothesis that the lines were laid out according to astronomical plans. Professor Alden Mason, a specialist in Peruvian antiquities, suspects signs of a kind of religion in the alignments, and perhaps a calendar as well.

Seen from the air, the clear-cut impression that the 37-mile-long plain of Nazca made on *me* was that of an airfield!

What is so farfetched about the idea?

Research (= knowledge) does not become possible until the thing that is to be investigated has actually been found! Once it is found, it is tirelessly polished and trimmed until it has become a stone that—miraculously enough—fits exactly into the existing mosaic. Classical archaeology does not admit that the pre-Inca peoples could have had a perfect surveying technique. And the theory that aircraft could have existed in antiquity is sheer humbug to them.

In that case, what purpose did the lines at Nazca serve? According to my way of thinking, they could have been laid out on their gigantic scale by working from a model and using a system of coordinates, or they could also have been built according to instructions from an aircraft. It is not yet possible to say with certainty whether the plain of Nazca was ever an airfield. If iron was used it will certainly not be found, because there is no prehistoric iron. Metals corrode in a few years; stone never corrodes. What is wrong with the idea that the lines were laid out to say to the "gods": "Land here! Everything has been prepared as you ordered"? The builders of the geometrical figures may have had no idea what they were doing. But perhaps they knew perfectly well what the "gods" needed in order to land.

Enormous drawings that were undoubtedly meant as signals for a being floating in the air are found on mountain-

sides in many parts of Peru. What other purpose could they have served?

One of the most peculiar drawings is carved on the high red wall of the cliffs in the Bay of Pisco. If you arrive by sea, you can make out a figure nearly 820 feet high from a distance of more than 12 miles. If you play at "It looks like . . . ," your immediate reaction is that this sculptor's work looks like a gigantic trident or a colossal three-branched candlestick. And a long rope was found on the central column of this stone sign. Did it serve as a pendulum in the past?

To be honest, we must admit that we are groping in the dark when we try to explain it. It cannot be meaningfully included in existing dogmas, which does not mean to say that there may not be some trick by which scholars could conjure this phenomenon too into the great mosaic of accepted archaeological thinking.

But what can have induced the pre-Inca peoples to build the fantastic lines, the landing strips, at Nazca? What madness could have driven them to create the 820-foot-high stone signs on the red cliffs south of Lima?

These tasks would have taken decades without modern machines and appliances. Their whole activity would have been senseless if the end product of their efforts had not been meant as signs to beings approaching them from great heights. The stimulating question still has to be answered: Why did they do all this if they had no idea that flying beings actually existed?

The identification of finds can no longer remain a matter for archaeology alone. A council of scientists from different fields of research would certainly bring us close to the solution of the puzzle. Exchange of opinions and dialogue would definitely produce illuminating insights. Because scientists do not take the posing of such questions seriously, there is a danger that research will come to no definite conclusions. Space travelers in the gray mists of time? An inad-

missible question to academic scientists. Anyone who asks questions like that ought to see a psychiatrist.

But the questions are there, and questions, thank heavens, have the impertinent quality of hovering in the air until they are answered. And there are many inadmissible questions like that. For example, what would people say if there were a calendar which gave the equinoxes, the astronomical seasons, the positions of the moon for every hour and also the movements of the moon, even taking the rotation of the earth into account?

That is no mere hypothetical question. This calendar exists. It was found in the dry mud at Tiahuanaco. It is a disconcerting find. It yields irrefutable facts and proves—can our self-assurance admit such a proof?—that the beings who produced, devised, and used the calendar had a higher culture than ours.

Another quite fantastic discovery was the Great Idol. This single block of red sandstone is longer than 24 feet and weighs 20 tons. It was found in the Old Temple. Again we have a contradiction between the superb quality and precision of the hundreds of symbols all over the idol and the primitive technique used for the building housing it. Indeed it is called the Old Temple because of the primitive technique.

H. S. Bellamy and P. Allan have given a closely reasoned interpretation of the symbols in their book *The Great Idol of Tiahuanaco.* They conclude that the symbols record an enormous body of astronomical knowledge and are based, as a matter of fact, on a round earth.

They conclude that the record fits perfectly Hoerbiger's *Theory of Satellites,* published in 1927, five years before the idol was discovered. This theory postulates that a satellite was captured by the earth. As it was pulled toward the earth

it slowed down the speed of the earth's revolutions. It finally disintegrated and was replaced by the moon.

The symbols on the idol exactly record the astronomical phenomena which would accompany this theory at a time when the satellite was making 425 revolutions around the earth in a year of 288 days. They are forced to conclude that the idol records the state of the heavens 27,000 years ago. They write, "Generally, the idol inscriptions give the impression . . . that it had been devised also as a record for future generations."

Here indeed is an object of great antiquity which demands a better explanation than "an ancient god." If this interpretation of the symbols can be substantiated, we must ask: Was the astronomical knowledge really amassed by people who still had a great deal to learn about building, or did it come from extraterrestrial sources? In either case the existence of such a sophisticated body of knowledge 27,000 years ago, demonstrated on both the idol and the calendar, is a staggering thought.

The city of Tiahuanaco teems with secrets. The city lies at a height of more than 13,000 feet, and it is miles from anywhere. Starting from Cuzco, Peru, you reach the city and the excavation sites after several days' travel by rail and boat. The plateau looks like the landscape of an unknown planet. Manual labor is torture for anyone who is not a native. The atmospheric pressure is about half as low as it is at sea level and the oxygen content of the air is correspondingly small. And yet an enormous city stood on this plateau.

There are no authentic traditions about Tiahuanaco. Perhaps we should be glad that in this case acceptable answers cannot be reached by leaning on the crutch of hereditary orthodox learning. Over the ruins, which are incredibly old (how old we do not yet know), lies the mist of the past, ignorance and mystery.

Blocks of sandstone weighing 100 tons are topped with other 60-ton blocks for walls. Smooth surfaces with extremely accurate chamfers join enormous squared stones which are held together with copper clamps. In addition, all the stonework is exceptionally neatly executed. Holes 8 feet long, whose purpose has not been explained thus far, are found in blocks weighing 10 tons. Nor do the 16½-foot-long, worn-down flagstones cut out of one piece contribute to the solution of the mystery that Tiahuanaco conceals. Stone water conduits, 6 feet long and 1½ feet wide, are found scattered about on the ground like toys, obviously by a catastrophe of tremendous dimensions. These finds stagger us by their accurate workmanship. Had our forefathers at Tiahuanaco nothing better to do than spend years—without tools—fashioning water conduits of such precision that our modern concrete conduits seem the work of mere bunglers in comparison?

In a courtyard which has now been restored there is a jumble of stone heads which, on closer observation, appears to be made up of the most varied races, for some of the faces have narrow lips, and some swollen; some long noses, and some hooked; some delicate ears, and some thick; some soft features, and some angular. And some of the heads wear strange helmets. Are all these unfamiliar figures trying to convey a message that we cannot or will not understand, inhibited as we are by stubbornness and prejudice?

One of the great archaeological wonders of South America is the monolithic Gate of the Sun at Tiahuanaco—a gigantic sculpture, nearly 10 feet high and 16½ feet wide, carved out of a single block. The weight of this piece of masonry is estimated at more than 10 tons. Forty-eight square figures in three rows flank a being who represents a flying god.

What does legend say about the mysterious city of Tiahuanaco?

It tells of a golden spaceship that came from the stars; in it came a woman, whose name was Oryana, to fulfill the task of

becoming the Great Mother of the earth. Oryana had only four fingers, which were webbed. Great Mother Oryana gave birth to 70 earth children, then she returned to the stars.

We do, in fact, find rock drawings of beings with four fingers at Tiahuanaco. Their age cannot be determined. No one from any of the ages known to us ever saw Tiahuanaco when it was not in ruins.

What secret does this city conceal? What message from other worlds awaits its solution on the Bolivian plateau? There is no plausible explanation for the beginning or the end of this culture. Of course, this does not stop some archaeologists from making the bold and self-confident assertion that the site of the ruins is 3,000 years old. They date this age from a couple of ridiculous little clay figures, which cannot possibly have anything in common with the age of the monolith. Scholars make things very easy for themselves. They stick a couple of old potsherds together, search for one or two adjacent cultures, stick a label on the restored find and—hey, presto!—once again everything fits splendidly into the approved pattern of thought. This method is obviously very much simpler than chancing the idea that an embarrassing technical skill might have existed or the thought of space travelers in the distant past. That would be complicating matters unnecessarily.

Nor must we forget Sacsahuamán! I am not referring here to the fantastic Inca defense works which lie a few feet above present day Cuzco, nor to the monolithic blocks weighing more than 100 tons, nor to the terrace walls, more than 1,500 feet long and 54 feet wide, in front of which tourists stand and take souvenir snapshots today. I am referring to the unknown Sacsahuamán, which lies a mere half mile or so from the well-known Inca fortress.

Our imagination is unable to conceive what technical resources our forefathers used to extract a monolithic rock

of more than 100 tons from a quarry and then transport it and work it in a distant spot. But when we are confronted with a block with an estimated weight of 20,000 tons, our imagination, made rather blasé by the technical achievements of today, is given its severest shock. On the way back from the fortifications of Sacsahuamán, in a crater in the mountainside, a few hundred yards away, the visitor comes across a monstrosity. It is a single stone block the size of a four-story house. It has been impeccably dressed in the most craftsmanlike way; it has steps and ramps and is adorned with spirals and holes. Surely the fashioning of this unprecedented stone block cannot have been merely a bit of leisure activity for the Incas? Surely it is much more likely that it served some as yet inexplicable purpose? To make the solution of the puzzle even more difficult the whole monstrous block stands on its head. So the steps run downward from the roof; the holes point in different directions like the indentations of a grenade; strange depressions, shaped rather like chairs, seem to hang floating in space. Who can imagine that human hands and human endeavor excavated, transported, and dressed this block? What power overturned it?

What titanic forces were at work here?

And to what end?

Still flabbergasted by this stone monstrosity, the visitor finds, barely 900 yards away, rock vitrifications of a kind that ought to be possible only through the melting of stone at extremely high temperatures. The surprised visitor is promptly told that the rock was ground down by glaciers. This explanation is ridiculous. A glacier, like every flowing mass, would logically flow down to one side. This property of matter is hardly likely to have changed just at the time when the vitrifications took place. In any case, it can scarcely be assumed that the glacier flowed down in six different directions over an area of some 18,000 square yards!

Sacsahuamán and Tiahuanaco conceal a great number of prehistorical mysteries for which superficial but quite unconvincing explanations are hawked around. Moreover, sand vitrifications are also found in the Gobi Desert and in the vicinity of old Iraqi archaeological sites. Who can explain why these sand vitrifications resemble those produced by the atomic explosions in the Nevada Desert?

When will something decisive be done to give a convincing answer to the prehistoric puzzles? At Tiahuanaco there are artificial overgrown hills, the "roofs" of which are absolutely level over an area of 4,784 square yards. It seems highly probable that buildings are concealed beneath them. So far no trench has been dug through the chain of hills, no spade is at work to solve the mystery. Admittedly, money is scarce. Yet the traveler often sees soldiers and officers who are obviously at a loss for something useful to do. What is wrong with letting a company of soldiers carry out excavations under expert supervision?

Money is available for so many other things in the world. Research for the future is of burning importance. As long as our past is undiscovered, one entry in the account for the future remains blank. Cannot the past help us to reach technical solutions which will not have to be found for the first time because they already existed in antiquity?

If the urge to discover our past is not sufficient incentive to set modern intensive research work in motion, perhaps the slide rule could be usefully employed. So far, at all events, no scientist has been asked to use the most modern apparatus to investigate radiation at Tiahuanaco, Sacsahuamán, the legendary Sodom, or in the Gobi Desert. Cuneiform texts and tablets from Ur, the oldest books of mankind, tell without exception of "gods" who rode in the heavens in ships, of "gods" who came from the stars, possessed terrible weapons, and returned to the stars. Why do we not seek them out, the old "gods"? Our radio-astronomers send signals into

the universe to make contact with unknown intelligences. Why don't we first or simultaneously seek the traces of unknown intelligences on our own earth, which is so much closer? For we are not groping blindly in a dark room—the traces are there for all to see.

Some 2,000 years before our era the Sumerians began to record the glorious past of their people. Today we still do not know where this people came from. But we do know that the Sumerians brought with them a superior advanced culture which they forced upon the still semibarbarian Semites. We also know that they always sought their gods on mountain peaks and that if there were no peaks in the regions they inhabited they erected artificial "mountains" on the plains. Their astronomy was incredibly highly developed. Their observatories achieved estimates of the rotation of the moon which differ from present-day estimates by no more than 0.4 seconds. In addition to the fabulous Epic of Gilgamesh, about which I shall have more to say later, they have left us one thing that is quite sensational. On the hill of Kuyunjik (former Nineveh) a calculation was found with the final result in our notation of 195,955,200,000,000. A number with fifteen digits! Our oft-quoted and extensively studied ancestors of Western culture, the Greeks, never rose above the figure 10,000 during the most brilliant period of their civilization. Anything beyond that was simply described as "infinite."

The old cuneiform inscriptions credit the Sumerians with a literally fantastic span of life. Thus the ten original kings ruled for a total of 456,000 years, and the twenty-three kings who had the arduous task of reconstruction after the Flood still managed to hold the reins of government for a total of 24,510 years, 3 months, and 3½ days.

Periods of years that are quite incomprehensible to our way of thinking, although the names of all the rulers exist in long lists, neatly perpetuated on seals and coins. What

would happen if here too we dared to take off our blinkers and look at the old things with fresh eyes, the eyes of today?

Let us suppose that foreign astronauts visited the territory of the Sumerians thousands of years ago. Let us assume that they laid the foundations of the civilization and culture of the Sumerians and then returned to their own planet, after giving this stimulus to development. Let us postulate that curiosity drove them back to the scene of their pioneer work every hundred terrestrial years to check the results of their experiment. By the standards of our present-day expectation of life the same astronauts could easily have survived for 500 terrestrial years. The theory of relativity shows that the astronauts would have aged only about forty years during the outward and return flight in a spaceship that had traveled just under the speed of light! Over the centuries the Sumerians would have built towers, pyramids, and houses with every comfort; they would have sacrificed to their gods and awaited their return. And after hundreds of terrestrial years they actually did return to them. "And then came the Flood, and after the Flood kingship came down from heaven once again," it says in a Sumerian cuneiform inscription.

In what form did the Sumerians imagine and depict their "gods"? Sumerian mythology and some Akkadian tablets and pictures provide information about this. The Sumerian "gods" were not anthropomorphic, and every symbol of a god was also connected with a star. Stars are depicted in Akkadian picture tablets as we might draw them today. The only remarkable thing is that these stars are circled by planets of various sizes. How did the Sumerians, who lacked our techniques for observing the heavens, know that a fixed star has planets? There are sketches in which people wear stars on their heads, while others ride on balls with wings. There is one picture that instantly reminds one of a model of an atom: a circle of balls arranged next to one another that radiate, but are not surrounded by rays. If we look at the legacy

of the Sumerians with "space eyes," it teems with questions and enigmas beside which the terrors of the deep and the wonders of the heavens pale into insignificance.

Here are only a few curiosities from the same geographical area:

Drawings of spirals, a rarity 6,000 years ago, at Geoy Tepe.

A flint industry credited with an age of 40,000 years at Gar Kobeh.

Similar finds at Baradostian estimated to be 30,000 years old.

Figures, tombs, and stone implements at Tepe Asiab dated 13,000 years back.

Petrified excrement, possibly not of human origin, found at the same place.

Tools and stone engravers found at Karim Shahir. Flint weapons and tools excavated at Barda Balka. Skeletons of grown men and a child found in the cave of Shandiar. They were dated (by the C-14 method) to about 45,000 B.C.

The list could be considerably enlarged, and every fact would strengthen the assertion that a mixture of primitive men lived in the geographical territory of Sumer about 40,000 years ago. Suddenly, for reasons inexplicable so far, the Sumerians were there with their astronomy, their culture, and their technology.

The conclusions to be drawn from the previous presence on earth of unknown visitors from the universe are still purely speculative. We can imagine that "gods" appeared who collected the semisavage peoples in the region of Sumer around them and transmitted some of their knowledge to them. The figurines and statues that stare at us today from the glass cases of museums show a racial mixture, with goggle eyes, domed foreheads, narrow lips, and generally long, straight noses. A picture that is very difficult to fit into the schematic system of thought and its concept of primitive peoples.

Visitors from the universe in remote antiquity?

In Lebanon there are glasslike bits of rock, called tektites, in which radioactive aluminum isotopes have been discovered.

In Egypt and Iraq there were finds of cut crystal lenses which today can only be made using cesium oxide, in other words an oxide that has to be produced by electrochemical processes.

In Helwan there is a piece of cloth, a fabric so fine that today it could be woven only in a special factory with great technical know-how and experience.

Electric dry batteries, which work on the galvanic principle, are on display in the Baghdad Museum.

In the same place the visitor can see electric elements with copper electrodes and an unknown electrolyte.

In the mountainous Asian region of Kohistan a cave drawing reproduces the exact position of the stars as they actually were 10,000 years ago. Venus and the earth are joined by lines.

Ornaments of smelted platinum were found on the Peruvian plateau.

Parts of a belt made of aluminum lay in a grave at Yungjen, China.

At Delhi there is an ancient pillar made of iron that is not destroyed by phosphorus, sulphur, or the effects of the weather.

This strange medley of "impossibilities" should make us curious and uneasy. By what means, with what intuition, did the primitive cave dwellers manage to draw the stars in their correct positions? From what precision workshop did the cut crystal lenses come? How could anyone smelt and model platinum, since platinum begins to melt only at 1,800° C? And how did the ancient Chinese make aluminum, a metal which has to be extracted from bauxite under very great chemico-technical difficulties?

Impossible questions, to be sure, but does that mean that we should not ask them? Since we are not prepared to accept or admit that there was a higher culture or an equally perfect technology before our own, all that is left is the hypothesis of a visit from space! As long as archaeology is conducted as it has been thus far, we shall never have a chance to discover whether our dim past was really dim and not perhaps quite enlightened.

A Utopian archaeological year is due, during which archaeologists, physicists, chemists, geologists, metallurgists, and all the corresponding branches of these sciences ought to concentrate their efforts on one single question: Did our forefathers receive visits from outer space?

For example, a metallurgist would be able to tell an archaeologist quickly and concisely how complicated the production of aluminum is. Is it not conceivable that a physicist might instantly recognize a formula in a rock drawing? A chemist with his highly developed apparatus might be able to confirm the assumption that obelisks were extracted from the rock by wetting wooden wedges or using unknown acids. The geologist owes us a whole series of answers to questions about what is of significance in certain Ice Age deposits. The team for a Utopian archaeological year would naturally include a group of divers who would investigate the Dead Sea for radioactive traces of an atomic explosion over Sodom and Gomorrha.

Why are the oldest libraries in the world secret libraries? What are people really afraid of? Are they worried that the truth, protected and concealed for so many thousands of years, will finally come to light?

Research and progress cannot be held back. For 4,000 years the Egyptians considered their "gods" to be real beings. In the Middle Ages we still killed "witches" in our burning ideological zeal. The belief of the ancient Greeks that they could tell the future from a goose's entrails is as out of date

today as the conviction of ultraconservatives that nationalism still has the slightest importance.

We have a thousand and one past errors to correct. The self-assurance that is feigned is threadbare and is really only an acute form of stubbornness. At the conference tables of orthodox scientists the delusion still prevails that a thing must be proved before a "serious" person may—or can—concern himself with it.

In the past the man who put forward a brand-new idea had to count on being despised and persecuted by the church and his colleagues. Things must have become easier, one thinks. There are no more anathemas, and fires at the stake are no longer lighted. The snag is that the methods of our time are less spectacular, but they are hardly less obstructive to progress. Now everything is more "civilized" and there is much less fuss. Theories and intolerably audacious ideas are hushed up or dismissed by such killer phrases as:

It's against the rules! (Always a good one!)

It's not classical enough! (Bound to impress.)

It's too revolutionary! (Unequaled in its deterrent effect!)

The universities won't go along with that! (Convincing!)

Others have already tried that! (Of course. But were they successful?)

We can't see any sense in it! (And that's that!)

That hasn't been proved yet! (*Quod erat demonstrandum!*)

Five hundred years ago a scientist cried out in the law courts, "Common sense must tell anyone that the earth cannot possibly be a ball, otherwise the people on the lower half would fall into the void!"

"Nowhere in the Bible," asserted another, "does it say that the earth revolves around the sun. Consequently every such assertion is the work of the devil!"

It seems as if narrow-mindedness was always a special characteristic when new worlds of ideas were beginning.

But on the threshold of the twenty-first century the research worker should be prepared for fantastic realities. He should be eager to revise laws and knowledge which were considered sacrosanct for centuries but are nevertheless called in question by new knowledge. Even if a reactionary army tries to damn up this new intellectual flood, a new world must be conquered in the teeth of all the unteachable, in the name of truth and reality. Anyone who spoke about satellites in scientific circles twenty years ago was committing a kind of academic suicide. Today artificial heavenly bodies, namely satellites, revolve around the sun; they have photographed Mars and landed smoothly on the moon and Venus, radioing first-class photographs of the unknown landscape back to earth with their (tourist) cameras. When the first such photos were radioed to earth from Mars in the spring of 1958, the strength used was 0.000,000,000,000,000,01 watts, an almost incredibly weak amount of current.

Yet *nothing* is incredible any longer. The word "impossible" should have become literally impossible for the modern scientist. Anyone who does not accept this today will be crushed by the reality tomorrow. So let us stick tenaciously to our theory, according to which astronauts from distant planets visited the earth thousands of years ago. We know that our ingenuous and primitive forefathers did not know what to make of the astronauts' superior technology. They worshiped the astronauts as "gods" who came from other stars, and the astronauts had no choice but patiently to accept their adoration as divinities—a homage, incidentally, for which our astronauts on unknown planets must be quite prepared.

Some parts of our earth are still inhabited by primitive peoples to whom a machine gun is a weapon of the devil. In that case a jet aircraft may well be an angelic vehicle to them. And a voice coming from a radio set might seem to be the voice of a god. These last primitive peoples, too,

naïvely hand down from generation to generation in their sagas their impressions of technical achievements that we take for granted. They still scratch their divine figures and their wonderful ships coming from heaven on cliffs and cave walls. In this way these savage peoples have actually preserved for us what we are seeking today.

Cave drawings in Kohistan, France, North America, and Southern Rhodesia, in the Sahara and Peru, as well as Chile, all contribute to our theory. Henri Lhote, a French scholar, discovered at Tassili, in the Sahara, several hundred walls painted with many thousands of pictures of animals and men, including figures in short elegant coats. They carry sticks and indefinable chests on the sticks. Next to the animal paintings we are astonished by a being in a kind of diver's suit. The great god Mars—so Lhote christened him —was originally more than 18 feet high; but the "savage" who bequeathed the drawing to us can scarcely have been as primitive as we should like him to be if everything is to fit neatly into the old pattern of thought. After all, the "savage" obviously used a scaffolding to be able to draw in proportion like that, for there have been no shifts in ground level in these caves during the last few millennia. Without overstretching my imagination, I got the impression that the great god Mars is depicted in a space or diving suit. On his heavy, powerful shoulders rests a helmet which is connected to his torso by a kind of joint. There are a number of slits on the helmet where mouth and nose would normally be. One would readily believe that it was the result of chance or even in the pictorial imagination of the prehistoric "artist" if this picture were unique. But there are several of these clumsy figures with the same equipment at Tassili, and very similar figures have also been found on rock faces in the United States, in the Tulare region of California.

I should like to be generous, and I am willing to postulate that the primitive artists were unskilled and portrayed the

figures in this rather crude way because it was the best they could do. But in that case how could the same primitive cave dwellers depict animals and normal human beings to perfection? It seems more credible to me to assume that the "artists" were perfectly capable of drawing what they actually saw. In Inyo County, California, a geometrical figure in a cave drawing is recognizable—without overstraining the imagination—as a normal slide rule in a double frame. The archaeological opinion is that the drawing shows figures of the gods.

An animal of unknown species with gigantic upright horns on its head appears on a pottery vessel found at Siyak in Iran. Why not? But both horns display five spirals to left and right. If you imagine two rods with large porcelain insulators, that is roughly what this drawing looks like. What do the archaeologists say to that? Quite simply that they are symbols of a god. Gods are of great value. People explain a great deal—certainly everything that is unexplained—by referring to their unknowableness and supernaturalness. In this world of the undemonstrable they can live in peace. Every figurine that is found, every artifact that is put together, every figure that can be restored from fragments —they are all instantly associated with some ancient religion or other. But if an object cannot be fitted into any of the existing religions, even forcibly, some new crackpot old cult is rapidly conjured up—like a rabbit out of a top hat! The sum works out once again.

But what if the frescoes, at Tassili or in the United States or in France, actually reproduce what the primitive peoples saw? What should we say if the spirals on the rods really depicted antennae, just as the primitive peoples had seen them on the unfamiliar gods? Isn't it possible that things which ought not to exist do in fact exist? A "savage," who nevertheless was skillful enough to execute wall paintings, cannot really have been so savage. The wall drawing of the White

Lady of Brandenberg (South Africa) could be a twentieth-century painting. She wears a short-sleeved pullover, closely fitting breeches, and gloves, garters and slippers. The lady is not alone; behind her stands a thin man with a strange prickly rod in his hand and wearing a very complicated helmet with a kind of visor. This would be accepted as a modern painting without hesitation, but the snag is that we are dealing with a cave drawing.

All the gods who are depicted in cave drawings in Sweden and Norway have uniform indefinable heads. The archaeologists say that they are animal heads. Yet isn't there something rather absurd about worshiping a "god" whom one also slaughters and eats? We often see ships with wings and even more frequently typical antennae.

Figures in bulky suits occur again in Val Camonica (Brescia, Italy), and, annoyingly enough, they also have horns on their heads. I am not going so far as to claim that the Italian cave dwellers shuttled backward and forward between North America or Sweden, the Sahara and Spain (Ciudad Real), to transmit their illustrative talents and ideas. Yet the awkward question is left hanging in the air—why did the primitive people create figures in bulky suits with antennae on their heads independently of each other?

I would not waste a word on these unexplained oddities if they existed in only one place in the world. But they are found almost everywhere.

As soon as we look at the past with our present-day gaze and use the fantasy of our technological age to fill up the gaps in it, the veils that shroud the darkness begin to lift. In the next chapter, a study of ancient holy books will help me to make my theory such a credible reality that in the long run the investigators of our past will no longer be able to evade the revolutionary questions.

4

Was God an Astronaut?

THE Bible is full of secrets and contradictions.

Genesis, for example, begins with the creation of the earth, which is reported with absolute geological accuracy. But how did the chronicler know that minerals preceded plants and plants preceded animals?

"And God said, Let us make man in our image, after our likeness," we read in Genesis 1:26.

Why does God speak in the plural? Why does he say "us," not "me," why "our," and not "my"? One would think that the one and only God ought to address mankind in the singular, not in the plural.

"And it came to pass, when men began to multiply on the face of the earth, and daughters were born unto them, that the sons of God saw the daughters of men that they were fair; and they took them wives of all which they chose" (Genesis 6: 1–2).

Who can tell us what sons of God took the daughters of men to wife? Ancient Israel had a single sacrosanct God. Where do the "sons of God" come from?

"There were giants in the earth in those days; and also

after that, when the sons of God came in unto the daughters of men, and they bare children to them, the same became mighty men which were of old, men of renown" (Genesis 6:4).

Once again we have the sons of God, who interbreed with human beings. Here, too, we have the first mention of giants. "Giants" keep on cropping up in all parts of the globe: in the mythology of East and West, in the sagas of Tiahuanaco and the epics of the Eskimos. "Giants" haunt the pages of almost all ancient books. So they must have existed. What sort of creatures were they, these "giants"? Were they our forefathers, who built the gigantic buildings and effortlessly manhandled the monoliths, or were they technically skilled space travelers from another star? One thing is certain. The Bible speaks of "giants" and describes them as "sons of God," and these "sons of God" breed with the daughters of men and multiply.

We are given a very exciting and detailed account of the catastrophe of Sodom and Gomorrah in Genesis 19:1–28.

Two angels came to Sodom in the evening when father Lot was sitting near the town gate. Obviously Lot was expecting these "angels," who soon proved to be men, because he recognized them at once and hospitably invited them to spend the night in his house. The men of the town, says the Bible, wanted to "know" the strangers. But the two strangers were able to dispel the local playboys' sexual lust with a single gesture. They smote the mischief-makers with blindness.

According to Genesis 19:12–14, the "angels" told Lot to take his wife, sons, daughters, sons-in-law, and daughters-in-law out of the town with all speed, for, they warned him, it would be destroyed very soon. The family was unwilling to believe this strange warning and took the whole thing for one of father Lot's bad jokes. And Genesis continues:

"And when the morning arose, then the angels hastened

Lot, saying, Arise, take thy wife, and thy two daughters, which are here; lest thou be consumed in the iniquity of the city. And while he lingered, the men laid hold upon his hand, and upon the hand of his wife, and upon the hand of his two daughters; the Lord being merciful unto him: and they brought him forth, and set him without the city. And it came to pass, when they had brought them forth abroad, that he said, Escape for thy life; look not behind thee, neither stay thou in the plain; escape to the mountain, lest thou be consumed. . . . Haste thee, escape thither; for I cannot do anything till thou be come thither."

According to this report, there is no doubt that the two strangers, the "angels," possessed a power unknown to the inhabitants. The suggestive urgency, the speed with which they drove the Lot family on, also makes us think. When father Lot tarried, they pulled him along by the hands. They had to get away in a matter of minutes. Lot, they ordered, must go into the mountains and he must not turn around. Nevertheless, Lot does not seem to have had unlimited respect for the "angels," because he keeps on making objections: ". . . I cannot escape to the mountain, lest some evil take me, and I die." A little later the angels say that they cannot do anything for him if he does not go with them.

What actually happened at Sodom? We cannot imagine that almighty God is tied down to a timetable. Then why were his "angels" in such a hurry? Or was the destruction of the city by some power or other fixed to the very minute? Had the countdown already begun and did the "angels" know about it? In that case the moment of destruction would obviously have been imminent. Was there no simpler method of bringing the Lot family to safety? Why did they have to go into the mountains at all costs? And why on earth should they be forbidden to look around again?

Admittedly these are awkward questions about a serious matter. But since the dropping of two atomic bombs on

Japan, we know the kind of damage such bombs cause and that living creatures exposed to direct radiation die or become incurably ill. Let us imagine for a moment that Sodom and Gomorrah were destroyed according to plan, *i.e.*, deliberately, by a nuclear explosion. Perhaps—let us speculate a little further—the "angels" simply wanted to destroy some dangerous fissionable material and at the same time to make sure of wiping out a human brood they found unpleasant. The time for the destruction was fixed. Those who were to escape it—such as the Lot family—had to stay a few miles from the center of the explosion in the mountains, for the rock faces would naturally absorb the powerful dangerous rays. And—we all know the story—Lot's wife turned around and looked straight at the atomic sun. Nowadays no one is surprised that she fell dead on the spot. "Then the Lord rained upon Sodom and upon Gomorrah brimstone and fire. . . ."

And this is how the account of the catastrophe ends (Genesis 19:27–28):

"And Abraham got up early in the morning to the place where he stood before the Lord: And he looked toward Sodom and Gomorrah, and toward all the land of the plain, and beheld, and, lo, the smoke of the country went up as the smoke of a furnace."

We may be as religious as our fathers, but we are certainly less credulous. With the best will in the world we cannot imagine an omnipotent, ubiquitous, infinitely good God who is above all concepts of time and yet does not know what is going to happen. God created man and was satisfied with his work. However, he seems to have repented of his deed later, because this same creator decided to destroy mankind. It is also difficult for enlightened children of this age to think of an infinitely good Father who gives preference to "favorite children," such as Lot's family, over countless others. The Old Testament gives some impressive descriptions in which

God alone or his angels fly straight down from heaven making a tremendous noise and issuing clouds of smoke. One of the most original descriptions of such incidents comes to us from the prophet Ezekiel:

"Now it came to pass in the thirtieth year, in the fourth month, in the fifth day of the month, as I was among the captives by the river of Chebar, that the heavens were opened . . . And I looked, and, behold, a whirlwind came out of the north, a great cloud, and a fire infolding itself, and a brightness was about it, and out of the midst thereof as the color of amber, out of the midst of the fire. Also out of the midst thereof came the likeness of four living creatures. And this was their appearance; they had the likeness of a man. And every one had four faces, and every one had four wings. And their feet were straight feet; and the sole of their feet was like the sole of a calf's foot: and they sparkled like the color of burnished brass."

Ezekiel gives precise details of the landing of this vehicle. He describes a craft that comes from the north, emitting rays and gleaming and raising a gigantic cloud of desert sand. Now the God of the Old Testament was supposed to be omnipotent. Then why does this almighty God have to come hurtling up from a particular direction? Cannot he be anywhere he wants without all this noise and fuss?

Let us follow Ezekiel's eyewitness account a little further:

"Now as I beheld the living creatures, behold one wheel upon the earth by the living creatures, with his four faces. The appearance of the wheels and their work was like unto the color of a beryl: and they four had one likeness: and their appearance and their work was as it were a wheel in the middle of a wheel. When they went they went upon their four sides: and they turned not as they went. As for their rings, they were so high that they were dreadful; and their rings were full of eyes round about them four. And when the living creatures went, the wheels went by them: and when

the living creatures were lifted up from the earth, the wheels were lifted up."

The description is astonishingly good. Ezekiel says that each wheel was in the middle of another one. An optical illusion! To our present way of thinking what he saw was one of those special vehicles the Americans use in the desert and swampy terrain. Ezekiel observed that the wheels rose from the ground simultaneously with the winged creatures. He was quite right. Naturally the wheels of a multipurpose vehicle, say an amphibious helicopter, do not stay on the ground when it takes off.

More from Ezekiel: "Son of man, stand upon thy feet, and I will speak unto thee."

The narrator heard this voice and hid his face in the ground in fear and trembling. The strange apparitions addressed Ezekiel as "son of man" and wanted to talk to him.

The account goes on: ". . . and I heard behind me a voice of a great rushing, saying, Blessed be the glory of the Lord from his place. I heard also the noise of the wings of the living creatures that touched one another, and the noise of the wheels over against them, and a noise of a great rushing."

In addition to his precise description of the vehicle, Ezekiel also noted the noise the novel monstrosity made when it left the ground. He likens the din made by the wings and the wheels to a "great rushing." Surely this suggests that this is an eyewitness account? The "gods" spoke to Ezekiel and told him that it was his task to restore law and order to the country. They took him with them in their vehicle and confirmed that they had not yet forsaken the country. This experience made a strong impression on Ezekiel, for he never tires of describing the weird vehicle. On three more occasions he says that each wheel was in the middle of a wheel and that the four wheels could go "on their four sides . . . and turned not as they went." And he was particularly impressed by the fact that the whole body of the vehicle, the

backs, the hands, the wings, and even the wheels were "full of eyes." The "gods" reveal the purpose and goal of their journey to the chronicler later when they tell him that he is living in the midst of a "rebellious house" which has eyes to see and sees not, ears to hear and hears not. Once he has been enlightened about his countrymen, there follow, as in all descriptions of such landings, advice and directions for law and order, as well as hints for creating a proper civilization. Ezekiel took the task very seriously and handed on the instructions of the "gods."

Once again we are confronted with all kinds of questions.

Who spoke to Ezekiel? What sort of beings were they?

They were certainly not "gods" in the traditional sense of the word, or they would not have needed a vehicle to move from one place to another. This kind of locomotion seems to me to be quite incompatible with the idea of an almighty God.

In this connection, there is another technical invention in the Book of Books, which is worthwhile examining impartially.

In Exodus 15:10, Moses relates the exact instructions which "God" gave for building the Ark of the Covenant. The directions are given to the very inch, how and where staves and rings are to be fitted, and from what alloy the metals are to be made. The instructions were meant to ensure that everything was carried out exactly as "God" wanted it. He warned Moses several times not to make any mistakes.

"And look that thou make them after their pattern, which was shewed thee in the mount" (Exodus 25:40).

"God" also told Moses that he would speak to him from the mercy seat. No one, he told Moses, should come close to the Ark of the Covenant, and he gave precise instructions about the clothing to be worn and the footwear appropriate when transporting it. In spite of all this care there was a slipup (2 Samuel 6:2). David had the Ark of the Covenant

moved, and Uzzah helped to drive the cart it was in. When passing cattle shook and threatened to overturn the Ark, Uzzah grabbed hold of it. He fell dead on the spot, as if struck by lightning.

Undoubtedly the Ark was electrically charged! If we reconstruct it today according to the instructions handed down by Moses, an electric conductor of several hundred volts is produced. The border and golden crown would have served to charge the condenser which was formed by the gold plates and a positive and negative conductor. If, in addition, one of the two cherubim on the mercy seat acted as a magnet, the loudspeaker—perhaps even a kind of set for communication between Moses and the spaceship—was perfect. The details of the construction of the Ark of the Covenant can be read in the Bible in their entirety. Without actually consulting Exodus, I seem to remember that the Ark was often surrounded by flashing sparks and that Moses made use of this "transmitter" whenever he needed help and advice. Moses heard the voice of his Lord, but he never saw him face to face. When he asked him to show himself to him on one occasion, his "God" answered:

"Thou canst not see my face: for there shall no man see me and live. And the Lord said, Behold, there is a place by me, and thou shalt stand upon a rock: And it shall come to pass, while my glory passeth by, that I will put thee in a clift of the rock, and will cover thee with my hand while I pass by: And I will take away mine hand, and thou shalt see my back parts: but my face shall not be seen" (Exodus 33:20–23).

There are some astonishing similarities in old texts. On the fifth tablet of the Epic of Gilgamesh, which is of Sumerian origin and much older than the Bible, we find virtually the same sentence:

"No mortal comes to the mountain where the gods dwell. He who looks the gods in the face must die."

In other ancient books which hand down stages in the history of mankind, we find very similar statements. Why did the "gods" not want to show themselves face to face? Why did they not let their masks fall? What were they afraid of? Or does the whole account in Exodus come from the Epic of Gilgamesh? Even that is possible. After all, Moses is supposed to have been brought up in the Egyptian royal household. Perhaps he had access to the library or acquired knowledge of ancient secrets during those years.

Perhaps we ought to query our Old Testament dating, too, because there is a good deal to support the fact that David, who lived much later, fought with a giant with six fingers and six toes in his day (2 Samuel 21:18–22). We must also consider the possibility that all the ancient histories, sagas, and narratives were collected and compiled in one spot and later found their way to different countries in the form of copies and somewhat garbled versions.

The finds during recent years near the Dead Sea (the Qumran texts) provide a valuable and astonishing amplification of the biblical Book of Genesis. Once again several hitherto unknown texts mention heavenly chariots, sons of heaven, wheels, and the smoke which the flying apparitions emitted. In the Moses Apocalypse (Chapter 33) Eve looked up to heaven and saw a chariot of light traveling there; it was drawn by four shining eagles. No terrestrial being could have described its magnificence, it says in Moses. Finally the chariot drove up to Adam, and smoke came out from between the wheels. This story, incidentally, does not tell us much that is new. Nevertheless, chariots of light, wheels, and smoke were spoken of as magnificent apparitions as early as and in connection with Adam and Eve.

A fantastic event was deciphered in the Lamech scroll. As the scroll is only fragmentarily preserved, sentences and whole paragraphs of the text are missing. However, what remains is curious enough to be worth retelling.

This tradition says that one fine day Lamech, Noah's father, came home and was surprised to find a boy who, judging by his appearance, was quite out of place in the family. Lamech reproached his wife Bat-Enosh and claimed that the child was not his. Then Bat-Enosh swore by all that was holy that the seed came from him, father Lamech, and not from a soldier or a stranger or one of the "sons of heaven." (In parenthesis we may ask: What sort of "sons of heaven" was Bat-Enosh talking about? At all events, this family drama took place before the Flood.) Nevertheless, Lamech did not believe his wife's protestations and, feeling very upset, went to ask his father Methuselah for advice. On his arrival, he related the family story that was so depressing to him. Methuselah listened to it, reflected, and went off himself to consult the wise Enoch. The cuckoo in the family nest was causing so much trouble that the old man accepted the hardships of the long journey. The question of the little boy's origin had to be cleared up. So Methuselah described how a boy had appeared in his son's family who looked much more like a son of heaven than a man. His eyes, hair, skin, and whole being were unlike those of the rest of the family.

Enoch listened to the story and sent old Methuselah on his way with the extremely worrying news that a great judgment would come upon the earth and mankind and that all "flesh" would be destroyed because it was sordid and dissolute. But the strange boy of whom the family was suspicious had been chosen as the progenitor of those who should survive the great universal judgment. Therefore he should order his son Lamech to call the child Noah. Methuselah journeyed home and told his son Lamech what was in store for them all. What could Lamech do but recognize the unusual child as his own and give him the name of Noah!

The astonishing thing about this family story is the information that Noah's parents were told about the coming Flood and that even grandfather Methuselah was forewarned

of the terrible event by the same Enoch who soon afterward, according to tradition, disappeared forever in a fiery heavenly chariot.

Does not this seriously pose the question whether the human race is not an act of deliberate "breeding" by unknown beings from outer space? Otherwise what can be the sense of the constantly recurring fertilization of human beings by giants and sons of heaven, with the consequent extermination of unsuccessful specimens? Seen in this light, the Flood becomes a preconceived project by unknown beings with the intention of exterminating the human race except for a few noble exceptions. But if the Flood, the course of which is historically proved, was quite deliberately planned and prepared—and that several hundred years before Noah received orders to build the ark—then it can no longer be accepted as a divine judgment.

Today the possibility of breeding an intelligent human race is no longer such an absurd theory. Just as the sagas of Tiahuanaco and the inscription on the pediment of the Gate of the Sun talk about a spaceship which landed the Great Mother on earth so that she could bear children, the old religious scripts, too, never tire of saying that "God" created men in his own image. There are texts which note that it needed several experiments before man finally turned out as successfully as "God" wanted. With the theory of a visit to our earth by unknown intelligences from the cosmos, we could postulate that today we are similarly constituted to those fabulous unidentified beings.

In this chain of evidence, the offerings for which the "gods" asked our ancestors raise curious problems. Their demands were by no means limited to incense and animal sacrifices. The lists of gifts required by the gods often include coins made of alloys which are specified in great detail. In fact, the biggest smelting installations in the ancient East were found at Ezion-geber, consisting of a regular ultra-

modern furnace with a system of air channels, chimney flues, and openings for specific purposes. Smelting experts of our own day are confronted with the as yet unexplained phenomenon of how copper could have been refined in this prehistoric installation. That was undoubtedly the case, for large deposits of copper sulphate were found in the caves and galleries around Ezion-geber. All these finds are estimated to be at least 5,000 years old!

If our own space travelers happen to meet primitive peoples on a planet one day, they too will presumably seem like "sons of heaven" or "gods" to them. Perhaps our intelligences will be as far ahead of the inhabitants of these unknown and as yet unimagined regions as those fabulous apparitions from the universe were ahead of our primitive ancestors. But what a disappointment if time on this as yet unknown landing place had also been progressing and our astronauts were not greeted as "gods" but laughed at as beings living far behind the times!

5

Fiery Chariots from the Heavens

A SENSATIONAL find was made in the hill of Kuyunjik around the turn of the century. It was a heroic epic of great expressive power engraved on twelve clay tablets, and it belonged to the library of the Assyrian King Ashurbanipal. The epic was written in Akkadian; later a second copy was found that goes back to King Hammurabi.

It is an established fact that the original version of the Epic of Gilgamesh stems from the Sumerians, that mysterious people whose origin we do not know but who left behind the astonishing fifteen-digit number and a very advanced astronomy. It is also clear that the main thread of the Epic of Gilgamesh runs parallel to the biblical Book of Genesis.

The first clay tablet of the Kuyunjik finds relates that the victorious hero Gilgamesh built the wall around Uruk. We read that the "god of heaven" lived in a stately home which contained granaries, and that guards stood on the town walls. We learn that Gilgamesh was a mixture of "god" and man —two-thirds "god," one-third man. Pilgrims who came to Uruk gazed up at him in fear and trembling because they had never seen his like for beauty and strength. In other

words, the beginning of the narrative contains the idea of interbreeding between "god" and man yet again.

The second tablet tells us that another figure, Enkidu, was created by the goddess of heaven, Aruru. Enkidu is described in great detail. His whole body was covered with hair; he wore skins, ate grass in the fields, and drank at the same watering place as the cattle. He also disported himself in the tumbling waters.

When Gilgamesh, the king of the town of Uruk, heard about this unattractive creature, he suggested that he should be given a lovely woman so that he would become estranged from the cattle. Enkidu, innocent fellow, was taken in by the king's trick and spent six days and six nights with a semi-divine beauty. This little bit of royal pandering leads us to think that the idea of cross-breeding between a demigod and a half-animal was not taken quite as a matter of course in this barbaric world.

The third tablet goes on to tell us about a cloud of dust which came from the distance. The heavens roared, the earth quaked, and finally the "sun god" came and seized Enkidu with mighty wings and claws. We read in astonishment that he lay like lead on Enkidu's body and that the weight of his body seemed to him like the weight of a boulder.

Even if we grant the old storytellers a fertile imagination and discount the additions made by translators and copyists, the incredible thing about the account still remains: How on earth could the old chroniclers have known that the weight of the body becomes as heavy as lead at a certain acceleration? Nowadays we know all about the forces of gravity and acceleration. When an astronaut is pressed back into his seat by a force of several G's at takeoff, it has all been calculated in advance.

But how on earth did this idea occur to the old chroniclers?

The fifth tablet narrates how Gilgamesh and Enkidu set out to visit the abode of the "gods" together. The tower in

One of the maps found in the Topkapi Palace, Istanbul, in the library of Admiral Piri Reis early in the eighteenth century. It shows the Americas and West Africa. Antarctica, mapped at the bottom, conforms very closely to the land mass under the ice, as revealed by echo-sounding gear. In recorded history it has never been free of ice.

Cartographers projected the Piri Reis map onto a grid using the reference points shown on the map. It then appeared virtually identical with this United States Air Force map of the world on an equidistant projection based on Cairo.

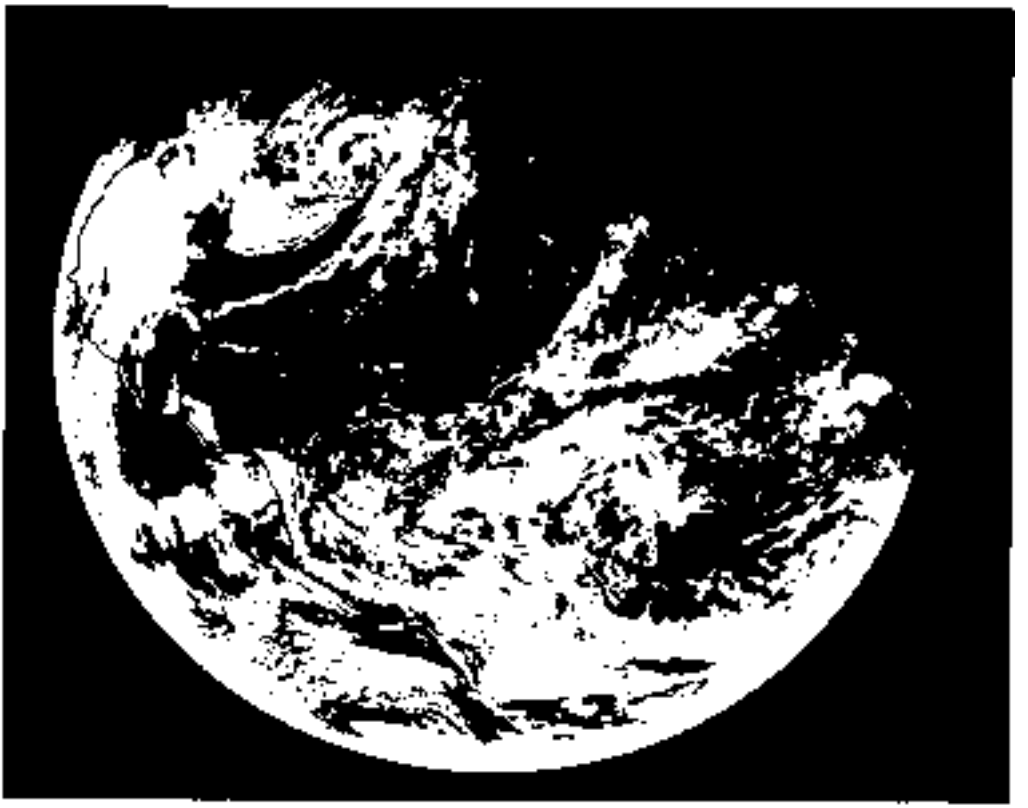
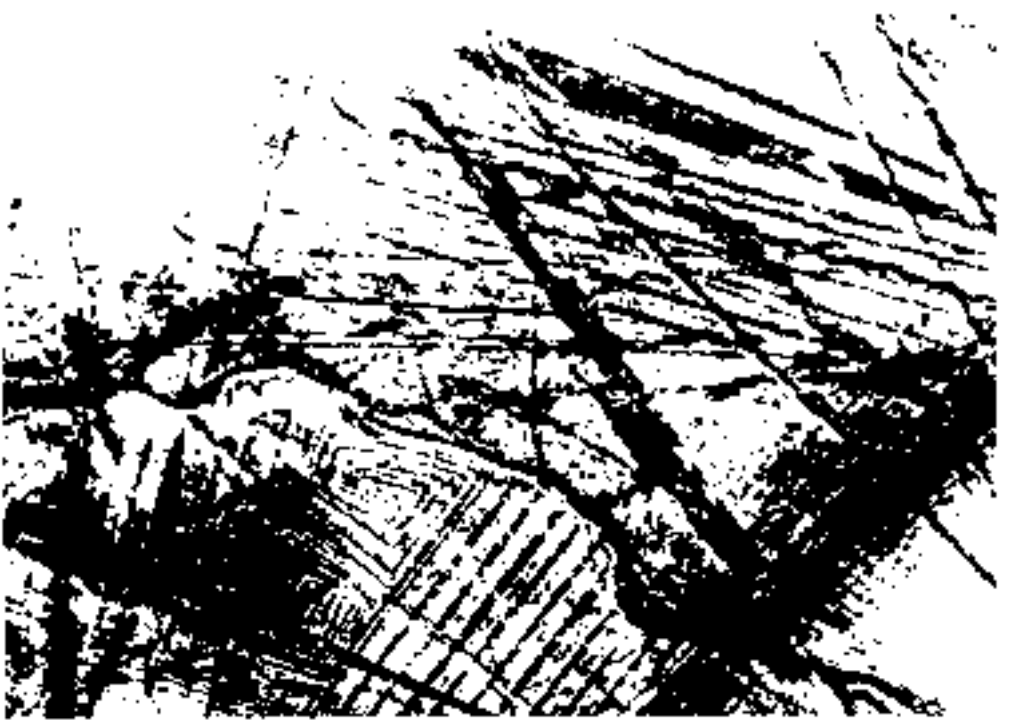


Photo of the earth taken from Apollo 8 shows close similarity to the Piri Reis map. The curious elongated shape of the Americas is particularly striking.

On the Plain of Nazca in Peru appear these strange markings. *Above*: A view of the plain showing that the markings (Inca roads, say the archaeologists) lead nowhere. *Below*: The markings in greater detail.



Above: Another of the strange markings on the Plain of Nazca. This is very reminiscent of the aircraft parking areas in a modern airport. *Below*: This huge 820-foot figure above the Bay of Pisco points to the Plain of Nazca. Could this be an aerial direction indicator rather than a symbol of religious significance?

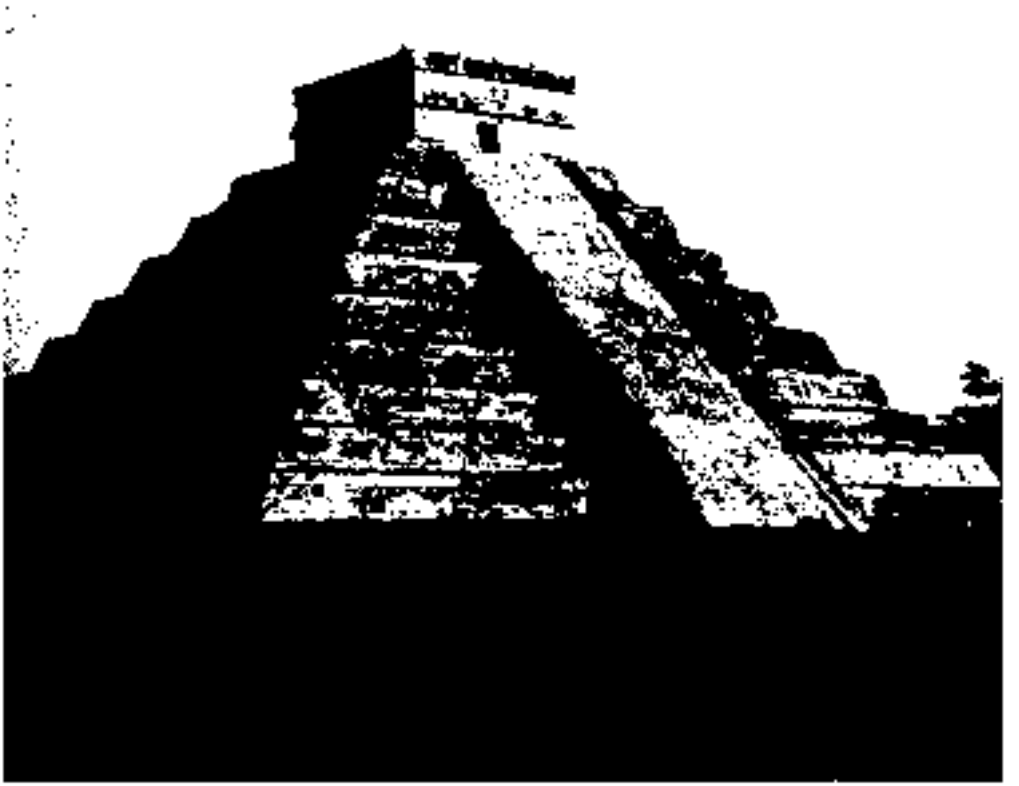
The next five photographs are from South America, a continent teeming with ruins and unexplained puzzles.

Left: Part of a huge monolithic block weighing an estimated 20,000 tons. It can be found at Sacsahuamán, Peru. What was its purpose? What titanic forces turned it upside down?

Below: And what did these great steps lead to? A throne for giants perhaps.

Rock vitrification requires very high temperatures. What caused it in Peru?

Part of the huge terrace walls at Sacsahuamán, Peru. Just look at the incredible accuracy of the jointing. How could primitive people have handled these huge blocks?

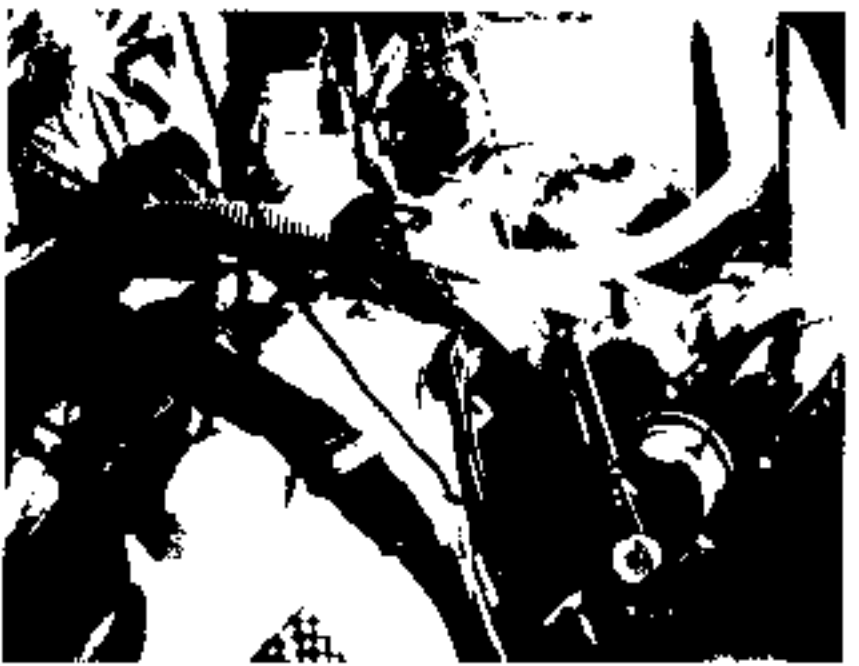


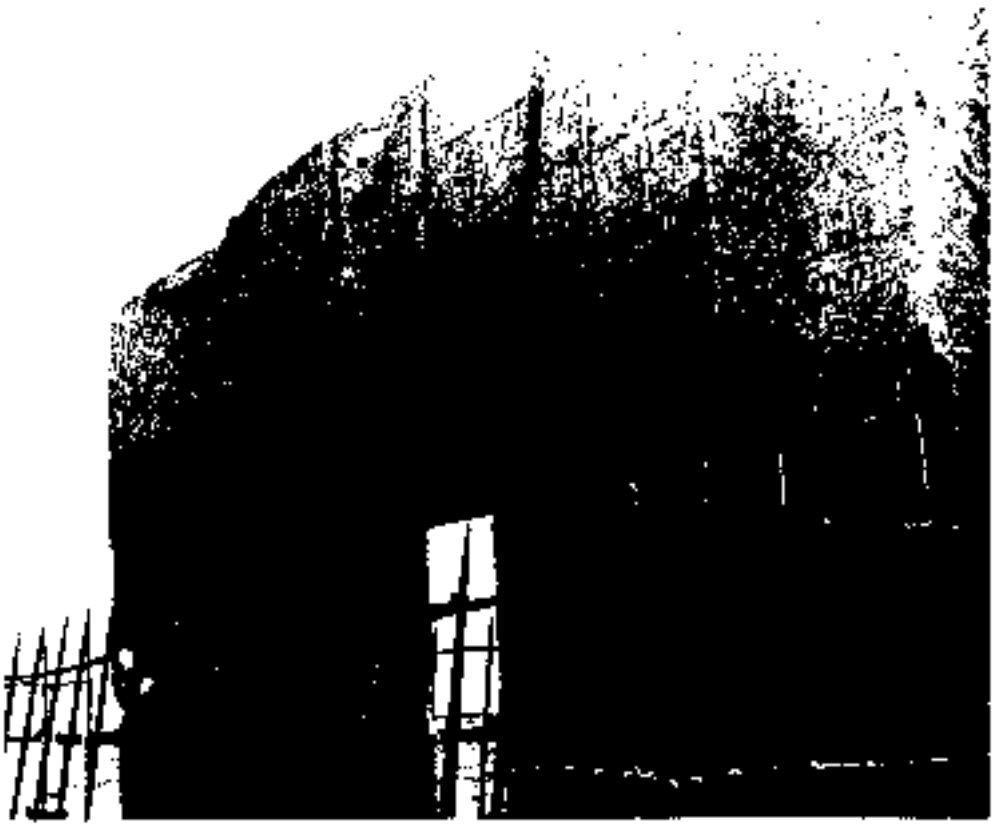
El Castillo at Chichén Itzá, Mexico. This has been constructed according to the Mayan calendar. The 91 steps on each side add up to 364, and the final platform gives 365.

In Bolivia near Santa Cruz are long concrete constructions. Could these really be roads for people who did not use the wheel?

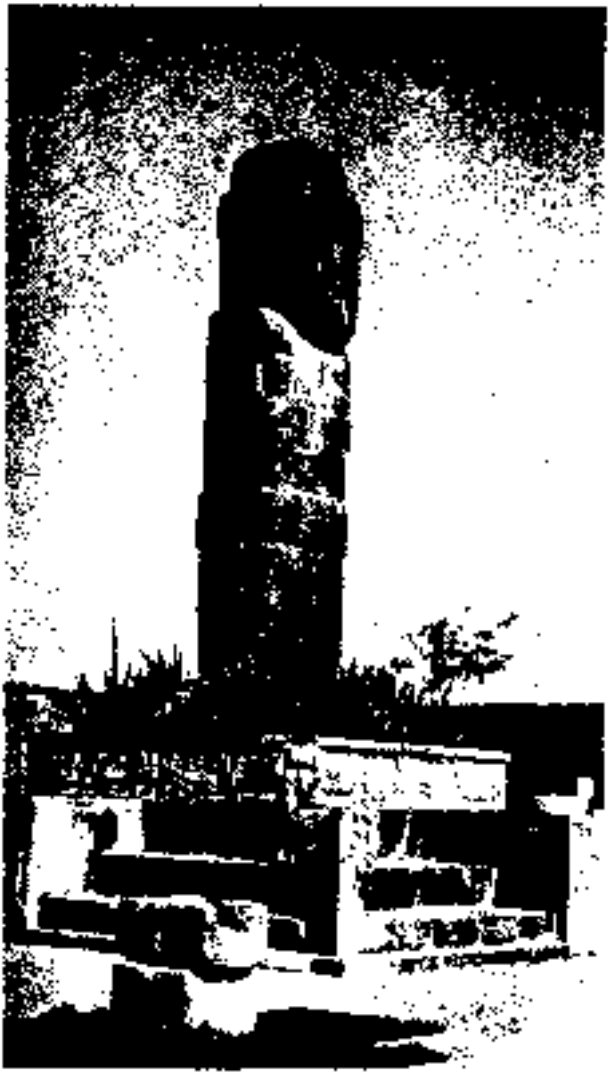
Left: This drawing was made in the temple at Copán. Could primitive imagination have produced anything so remarkably similar to a modern astronaut in his rocket? The strange markings at the foot of the drawing can only be an indication of the flames and gases coming from the propulsion unit.

Below: American astronauts today take up the same position, their hands on controls, their eyes checking instruments.





There is no recorded history of Tiahuanaco. On the Gate of the Sun, *above*, carved out of a single 10-ton block, is the representation of a flying god flanked by forty-eight mysterious figures. Legend tells of a golden spaceship which came from the stars.



On the great idol, *left,* is found information about astronomical phenomena covering an immense span of time. And, *below,* once again what primitive people had techniques for handling and accurately jointing such huge blocks of stone, in this case water conduits 6 feet long and 1½ feet wide?

which the goddess Irninis lived could be seen gleaming in the distance long before they reached it. The arrows and missiles which the cautious wanderers rained on the guards rebounded harmlessly. And as they reached the precincts of the "gods," a voice roared at them: "Turn back! No mortal comes to the holy mountain where the gods dwell; he who looks the gods in the face must die."

"Thou canst not see my face, for there shall no man see me and live," it says in Exodus.

On the seventh tablet is the first eyewitness account of a space trip, told by Enkidu. He flew for four hours held in the brazen talons of an eagle. This is how his story goes literally:

"He said to me: 'Look down at the land. What does it look like? Look at the sea. How does it seem to you?' And the land was like a mountain and the sea was like a lake. And again he flew for four hours and said to me: 'Look down at the land. What does it look like? Look at the sea. How does it seem to you?' And the earth was like a garden and the sea like the water channel of a gardener. And he flew higher yet another four hours and spake: 'Look down at the land. What does it look like? Look at the sea. How does it seem to you?' And the land looked like porridge and the sea like a water trough."

In this case some living creature must have seen the earth from a great height. The account is too accurate to have been the product of pure imagination. Who could have possibly said that the land looked like porridge and the sea like a water trough if *some* conception of the globe from above had not existed? Because the earth actually does look like a jigsaw puzzle of porridge and water troughs from a great height.

When the same tablet tells us that a door spoke like a living person, we unhesitatingly identify this strange phenomenon as a loudspeaker. And on the eighth tablet this same

Enkidu, who must have seen the earth from a considerable height, dies of a mysterious disease, so mysterious that Gilgamesh asks whether he may not have been smitten by the poisonous breath of a heavenly beast. But where did Gilgamesh get the idea that the poisonous breath of a heavenly beast could cause a fatal and incurable disease?

The ninth tablet describes how Gilgamesh mourns for the death of his friend Enkidu and decides to undertake a long journey to the gods, because he is obsessed by the idea that he might die of the same disease as Enkidu. The narrative says that Gilgamesh came to two mountains which supported the heavens and that these two mountains arched the gate of the sun. At the gate of the sun he met two giants, and after a lengthy discussion they let him pass because he was two-thirds god himself. Finally Gilgamesh found the garden of the gods, beyond which stretched the endless sea. While Gilgamesh was on his way, the gods warned him twice: "Gilgamesh, whither art thou hurrying? Thou shalt not find the life that thou seekest. When the gods created man, they allotted him to death, but life they retained in their own keeping."

Gilgamesh would not be warned; he wanted to reach Utnapishtim, the father of men, no matter what the dangers. But Utnapishtim lived on the far side of the great sea; no road led to him and no ship flew across it except the sun god's. Braving all kinds of perils Gilgamesh crossed the sea. Then follows his encounter with Utnapishtim, which is described in the eleventh tablet.

Gilgamesh found the figure of the father of men neither bigger nor broader than his own, and he said that they resembled each other like father and son. Then Utnapishtim tells Gilgamesh about his past, strangely enough in the first person.

To our amazement we are given a detailed description of

the Flood. He recounts that the "gods" warned him of the great flood to come and gave him the task of building a boat on which he was to shelter women and children, his relatives, and craftsmen of every kind. The description of the violent storm, the darkness, the rising flood, and the despair of the people he could not take with him has tremendous narrative power even today. We also hear—just as in Noah's account in the Bible—the story of the raven and the dove that were released and how finally, as the waters went down, the boat grounded on a mountain.

The parallel between the stories of the Flood in the Epic of Gilgamesh and the Bible is beyond doubt, and there is not a single scholar who contests it. The fascinating thing about this parallelism is that we are dealing with different omens and different "gods" in this case.

If the account of the Flood in the Bible is a secondhand one, the first-person form of Utnapishtim's narrative shows that a survivor, an eyewitness, was speaking in the Epic of Gilgamesh.

It has been clearly proved that a catastrophic flood did take place in the ancient East some thousands of years ago. Ancient Babylonian cuneiform texts indicate very precisely where the remains of the boat ought to be. And on the south side of Mount Ararat investigators did in fact find three pieces of wood which possibly indicate the place where the ark grounded. Incidentally, the chances of finding the remains of a ship that was mainly built of wood and survived a flood more than 6,000 years ago are extremely remote.

Besides being a first-hand report, the Epic of Gilgamesh also contains descriptions of extraordinary things that could not have been made up by any intelligence living at the time the tablets were written, any more than they could have been devised by the translators and copyists who manhandled the epic over the centuries. For there are facts buried among

the descriptions that must have been known to the author of the Epic of Gilgamesh—and we may discover them if we look in the light of present-day knowledge.

Perhaps asking some new questions may throw a little light on the darkness. Is it possible that the Epic of Gilgamesh did not originate in the ancient East at all, but in the Tiahuanaco region? Is it conceivable that descendants of Gilgamesh came from South America and brought the Epic with them? An affirmative answer would at least explain the mention of the Gate of the Sun, the crossing of the sea, and at the same time the sudden appearance of the Sumerians, for as is well known, all the creations of Babylon, which came later, go back to the Sumerians. Undoubtedly the advanced Egyptian culture of the Pharaohs possessed libraries in which the old secrets were preserved, taught, learned, and written down. As has already been mentioned, Moses grew up at the Egyptian court and certainly had access to the venerable library rooms. Moses was a receptive and learned man; indeed he is supposed to have written five of his books himself, although it is still an unsolved puzzle in what language he could have written them.

If we work on the hypothesis that the Epic of Gilgamesh came to Egypt from the Sumerians by way of the Assyrians and Babylonians, and that the young Moses found it there and adapted it for his own ends, then the Sumerian story of the Flood, and not the biblical one, would be the genuine account.

Ought we not to ask such questions? The classical method of research into antiquity has got bogged down and so cannot come to the right unassailable kind of conclusions. It is far too attached to its stereotyped pattern of thought and leaves no scope for the imaginative ideas and speculations which alone could produce a creative impulse.

Many opportunities for research into the ancient East undoubtedly foundered on the inviolability and sacredness of

the Bible. People did not dare to ask questions and voice their doubts aloud in the face of this taboo. Even the scholars of the nineteenth and twentieth centuries, ostensibly so enlightened, were still caught in the mental fetters of thousand-year-old errors, because the way back would inevitably have called in question parts of the biblical story. But even very religious Christians must have realized that many of the events described in the Old Testament cannot really be reconciled with the character of a good, great, and omnipresent God. The very man who wants to preserve the religious dogmas of the Bible intact ought to be interested in clarifying who actually educated men in antiquity, who gave them the first rules for a communal life, who handed down the first laws of hygiene, and who annihilated the degenerate stock.

If we think in this way and ask questions like this, it need not mean that we are irreligious. I myself am quite convinced that when the last question about our past has been given a genuine and convincing answer SOMETHING, which I call GOD for want of a better name, will remain for eternity.

Yet the hypothesis that the unimaginable god needed vehicles with wheels and wings to move from place to place, mated with primitive people, and dared not let his mask fall remains an outrageous piece of presumption, as long as it is unsupported by proof. The theologians' answer that God is wise and that we cannot imagine in what way he shows himself and makes his people humble is really dodging our question and is unsatisfactory for that reason. People would like to close their eyes to new realities, too. But the future gnaws away at our past day after day. In the near future, the first men will land on Mars. If there is a single, ancient, long-abandoned edifice there, if there is a single object indicating earlier intelligences, if there is one still recognizable rock drawing to be found, then these finds will shake the foundations of our religions and throw our past into confusion. One

single discovery of this kind will cause the greatest revolution and reformation in the history of mankind.

In view of the inevitable confrontation with the future, would it not be more intelligent to use new imaginative ideas when conjuring up our past? Without being unbelieving, we can no longer afford to be credulous. Every religion has an outline, a schema, of its god; it is constrained to think and believe within the framework of this outline. Meanwhile, with the space age, the *intellectual* Day of Judgment comes ever nearer. The theological clouds will evaporate, scattered like shreds of mist. With the decisive step into the universe we shall have to recognize that there are not 2,000,000 gods, not 20,000 sects, not 10 great religions, but only one.

But let us continue to build onto our hypothesis of the Utopian past of humanity. This is the picture so far:

Dim, as yet undefinable ages ago an unknown spaceship discovered our planet. The crew of the spaceship soon found out that the earth had all the prerequisites for intelligent life to develop. Obviously the "man" of those times was no *homo sapiens* but something rather different. The spacemen artificially fertilized some female members of this species, put them into a deep sleep, so ancient legends say, and departed. Thousands of years later the space travelers returned and found scattered specimens of the genus *homo sapiens*. They repeated their breeding experiment several times until finally they produced a creature intelligent enough to have the rules of society imparted to it. The people of that age were still barbaric. Because there was a danger that they might retrogress and mate with animals again, the space travelers destroyed the unsuccessful specimens or took them with them to settle them on other continents. The first communities and the first skills came into being; rock faces and cave walls were painted, pottery was discovered, and the first attempts at architecture were made.

These first men had tremendous respect for the space travelers. Because they came from somewhere absolutely unknown and then returned there again, they were the "gods" to them. For some mysterious reason the "gods" were interested in passing on their intelligence. They took care of the creatures they bred; they wanted to protect them from corruption and preserve them from evil. They wanted to ensure that their community developed constructively. They wiped out the freaks and saw to it that the remainder received the basic requirements for a society capable of development.

Admittedly this speculation is still full of holes. I shall be told that proofs are lacking. The future will show how many of those holes can be filled in. This book puts forward a hypothesis made up of many speculations, therefore the hypothesis must not be "true." Yet when I compare it with the theories enabling many religions to live unassailed in the shelter of their taboos, I should like to attribute a minimal percentage of probability to my hypothesis.

Perhaps it will do some good to say a few words about the "truth." Anyone who believes in a religion and has never been under attack is convinced that he has the "truth." That applies not only to Christians but also to the members of other religious communities, both large and small. Theosophists, theologists, and philosophers have reflected about their teaching, about their master and his teaching; they are convinced that they have found the "truth." Naturally every religion has its history, its promises made by God, its covenants with God, its prophets and wise teachers who have said. . . . Proofs of the "truth" always start from the center of one's own religion and work outward. The result is a biased way of thinking which we are brought up to accept from childhood. Nevertheless generations lived and still do live in the conviction that they possess the "truth."

Somewhat more modestly, I claim that we cannot possess

the "truth." At best we can believe in it. Anyone who really seeks *the* truth cannot and ought not to seek it under the aegis and within the confines of his own religion. If he does so, is not insincerity godfather to a matter which demands the greatest integrity? What is the purpose and goal of life after all? To believe in the "truth" or to seek it?

Even if Old Testament facts can be proved archaeologically in Mesopotamia, those verified facts are still no proof of the religion concerned. If ancient cities, villages, wells, and inscriptions are dug up in a particular area, the finds show that the history of the people who lived there is an actual fact. But they do not prove that the god of that people was the one and only god (and not a space traveler).

Today excavations all over the world show that traditions tally with the facts. But would it occur to a single Christian to recognize the god of the pre-Inca culture as the *genuine* god as the results of excavations in Peru? Quite simply what I mean is that everything, both myth and actual experience, makes up the history of a people. No more. But even that, I claim, is quite a lot.

So anyone who really seeks truth cannot ignore new and bold and as yet unproved points of view simply because they do not fit into his scheme of thought (or belief). Since the question of space travel did not arise a hundred years ago, our fathers and grandfathers could not reasonably have had thoughts about whether our ancestors had visits from the universe. Let us just venture the frightful, but unfortunately possible, idea that our present-day civilization was entirely destroyed in an H-bomb war. Five thousand years later archaeologists would find fragments of the Statue of Liberty in New York. According to our current way of thinking they would be bound to assert that they were dealing with an unknown divinity, probably a fire god (because of the torch) or a sun god (because of the rays around the statue's head).

They would never dare to say that it was a perfectly simple artifact, namely a statue of liberty.

It is no longer possible to block the roads to the past with dogmas.

If we want to set out on the arduous search for the truth, we must all summon up the courage to leave the lines along which we have thought until now and as the first step begin to doubt everything that we previously accepted as correct and true. Can we still afford to close our eyes and stop up our ears because new ideas are supposed to be heretical and absurd?

After all, the idea of a landing on the moon was absurd fifty years ago.

6

Ancient Imagination and Legends, or Ancient Facts?

AS I have previously observed, there were things in antiquity that should not have existed according to current ideas. But my collector's zeal is by no means exhausted with the finds already accumulated.

Why? Because the mythology of the Eskimos also says that the first tribes were brought to the North by "gods" with brazen wings! The oldest American Indian sagas mention a thunderbird who introduced fire and fruit to them. The Mayan legend, the Popol Vuh, tells us that the "gods" were able to recognize everything: the universe, the four cardinal points of the compass, and even the round shape of the earth.

What are the Eskimos doing talking about metal birds? Why do the Indians mention a thunderbird? How are the ancestors of the Mayas supposed to have known that the earth is round?

The Mayas were intelligent; they had a highly developed culture. They left behind not only a fabulous calendar but also incredible calculations. They knew the Venusian year of 584 days and estimated the duration of the terrestrial year

at 365.2420 days. (The exact calculation today: 365.2422!) The Mayas left behind them calculations to last for 64,000,000 years. Later inscriptions dealt in units which probably approach 400,000,000 years. The famous Venusian formula could quite plausibly have been calculated by an electronic brain. At any rate, it is difficult to believe that it originated from a jungle people. The Venusian formula of the Mayas runs as follows:

The Tzolkin has 260 days, the terrestrial year 365 days, and the Venusian year 584 days. These figures conceal the possibility of an astonishing division sum. 365 is divisible by 73 five times, and 584 eight times. So the incredible formula takes this form:

(Moon) $20 \times 13 = 260 \times 2 \times 73 = 37{,}960$
(Sun) $8 \times 13 = 104 \times 5 \times 73 = 37{,}960$
(Venus) $5 \times 13 = 65 \times 8 \times 73 = 37{,}960$

In other words, all the cycles coincide after 37,960 days. Mayan mythology claimed that then the "gods" would come to the great resting place.

The religious legends of the pre-Inca peoples say that the stars were inhabited and that the "gods" came down to them from the constellation of the Pleiades. Sumerian, Assyrian, Babylonian, and Egyptian cuneiform inscriptions constantly present the same picture: "gods" came from the stars and went back to them; they traveled through the heavens in fireships or boats, possessed terrifying weapons, and promised immortality to individual men.

It was, of course, perfectly natural for the ancient peoples to seek their gods in the sky and also to give their imagination full rein when describing the magnificence of these incomprehensible apparitions. Yet even if all that is accepted, there are still too many anomalies left.

For example, how did the chronicler of the Mahabharata

know that a weapon capable of punishing a country with a twelve years' drought could exist? And powerful enough to kill the unborn in their mothers' wombs? This ancient Indian epic, the Mahabharata, is more comprehensive than the Bible, and even at a conservative estimate its original core is at least 5,000 years old. It is well worth reading this epic in the light of present-day knowledge.

We shall not be very surprised when we learn in the Ramayana that Vimanas, *i.e.,* flying machines, navigated at great heights with the aid of quicksilver and a great propulsive wind. The Vimanas could cover vast distances and could travel forward, upward and downward. Enviably maneuverable space vehicles!

This quotation comes from the translation by N. Dutt, 1891: "At Rama's behest the magnificent chariot rose up to a mountain of cloud with a tremendous din. . . ." We cannot help noticing that not only is a flying object mentioned again but also that the chronicler talks of a tremendous din.

Here is another passage from the Mahabharata: "Bhima flew with his Vimana on an enormous ray which was as brilliant as the sun and made a noise like the thunder of a storm" (C. Roy, 1889).

Even imagination needs something to start it off. How can the chronicler give descriptions that presuppose at least some idea of rockets and the knowledge that such a vehicle can ride on a ray and cause a terrifying thunder?

In the Samsaptakabadha a distinction is made between chariots that fly and those that cannot fly. The first book of the Mahabharata reveals the intimate history of the unmarried Kunti, who not only received a visit from the sun god but also had a son by him, a son who is supposed to have been as radiant as the sun itself. As Kunti was afraid—even in those days—of falling into disgrace, she laid the child in a little basket and put it in a river. Adhirata, a worthy man of the

Suta caste, fished basket and child out of the water, and brought up the infant.

Really a story that is hardly worth mentioning if it were not so remarkably like the story of Moses! And, of course, there is yet another reference to the fertilization of humans by gods. Like Gilgamesh, Aryuna, the hero of the Mahabharata, undertakes a long journey in order to seek the gods and ask them for weapons. And when Aryuna has found the gods after many perils, Indra, the lord of heaven, with his wife, Sachi, beside him, grants him a very exclusive audience. The two do not meet the valiant Aryuna just anywhere. They meet him in a heavenly war chariot and even invite him to travel in the sky with them.

Certain numerical data in the Mahabharata are so precise that one gets the impression that the author was writing from first-hand knowledge. Full of repulsion, he describes a weapon that could kill all warriors who wore metal on their bodies. If the warriors learned about the effect of this weapon in time, they tore off all the metal equipment they were wearing, jumped into a river, and washed themselves and everything that they had come into contact with very thoroughly. Not without reason, as the author explains, for the weapon made the hair and nails fall out. Everything living, he bemoaned, became pale and weak.

In the eighth book we meet Indra in his heavenly jet chariot again. Out of the whole of mankind he has chosen Yudhisthira as the only one who may enter heaven in his mortal frame. Here, too, the parallel with the stories of Enoch and Elijah cannot be overlooked.

In the same book, in what is perhaps the first account of the dropping of an H-bomb, it says that Gurkha loosed a single projectile on the triple city from a mighty Vimana. The narrative uses words which linger in our memories from eyewitness accounts of the detonation of the first hydrogen bomb at Bikini: white-hot smoke, a thousand times brighter than the sun, rose up in infinite brilliance and reduced the

city to ashes. When Gurkha landed again, his vehicle was like a flashing block of antimony. And for the benefit of the philosophers I should mention that the Mahabharata says that time is the seed of the universe.

The Tibetan books Tantyua and Kantyua also mention prehistoric flying machines, which they call "pearls in the sky." Both books expressly emphasize that this knowledge is secret and not for the masses. In the Samarangana Sutradhara whole chapters are devoted to describing airships whose tails spout fire and quicksilver.

The word "fire" in ancient texts cannot mean burning fire, for altogether some forty different kinds of "fire," mainly connected with esoteric and magnetic phenomena, are enumerated. It is hard to believe that the ancient peoples should have known that it is possible to gain energy from heavy metals and how to do so. However, we should not oversimplify and dismiss the old Sanscrit texts as mere myths. The large number of passages from old texts already quoted turns the suspicion that men encountered flying "gods" in antiquity almost into a certainty. We are not going to get any further with the old approach which scholars unfortunately still cling to: "That doesn't exist . . . those are mistakes in translation . . . those are fanciful exaggerations by the author or copyists." We must use a new working hypothesis, one developed from the technological knowledge of our age, to throw light onto the thicket behind which our past lies concealed. Just as the phenomenon of the spaceship in the remote past is explicable, there is also a plausible explanation of the terrible weapons which the gods made use of at least once in those days and which are so frequently described. A passage from the Mahabharata is bound to make us think:

> It was as if the elements had been unleashed. The sun spun round. Scorched by the incandescent heat of the weapon, the world reeled in fever. Elephants were set on fire by the heat

and ran to and fro in a frenzy to seek protection from the terrible violence. The water boiled, the animals died, the enemy was mown down and the raging of the blaze made the trees collapse in rows as in a forest fire. The elephants made a fearful trumpeting and sank dead to the ground over a vast area. Horses and war chariots were burnt up and the scene looked like the aftermath of a conflagration. Thousands of chariots were destroyed, then deep silence descended on the sea. The winds began to blow and the earth grew bright. It was a terrible sight to see. The corpses of the fallen were mutilated by the terrible heat so that they no longer looked like human beings. Never before have we seen such a ghastly weapon and never before have we heard of such a weapon (C. Roy, 1889).

The story goes on to say that those who escaped washed themselves, their equipment, and their arms, because everything was polluted by the death-dealing breath of the "gods." What does it say in the Epic of Gilgamesh? "Has the poisonous breath of the heavenly beast smitten you?"

Alberto Tulli, formerly keeper of the Egyptian Department in the Vatican Museum, found a fragment of a text from the time of Thutmose III, who lived about 1500 B.C. It relates the tradition that the scribes saw a ball of fire come down from heaven and that its breath had an evil smell. Thutmose and his soldiers watched this spectacle until the ball of fire rose in a southerly direction and disappeared from view.

All the texts quoted date from millennia before our era. The authors lived on different continents and belonged to different cultures and religions. There were no special messengers to spread the news in those days, and intercontinental journeys were not an everyday occurrence. In spite of this, traditions telling almost the same story come from the four corners of the world and from innumerable sources. Did all their authors have the same bee in their bon-

net? Were they all haunted by the same phenomenon? It is impossible and incredible that the chroniclers of the Mahabharata, the Bible, the Epic of Gilgamesh, the texts of the Eskimos, the American Indians, the Scandinavians, the Tibetans, and many, many other sources should all tell the same stories—of flying "gods," strange heavenly vehicles, and the frightful catastrophes connected with these apparitions —by chance and without any foundation. They cannot all have had the same ideas all over the world. The almost uniform texts can stem only from facts, *i.e.*, from prehistoric events. They related what was actually there to see. Even if the reporter in the remote past may have exaggerated his story with fanciful trimmings, much as newsmen do today, the fact, the actual incident, still remains at the core of all exclusive accounts, as it does today. And that incident obviously cannot have been invented in so many places in different ages.

Let us make up an example:

A helicopter lands in the African bush for the first time. None of the natives has ever seen such a machine. The helicopter lands in a clearing with a sinister clatter; pilots in battle dress, with crash helmets and machine guns, jump out of it. The savage in his loincloth stands stupefied and uncomprehending in the presence of this thing that has come down from heaven and the unknown "gods" who came with it. After a time the helicopter takes off again and disappears into the sky.

Once he is alone again, the savage has to work out and interpret this apparition. He will tell others who were not present what he saw: a bird, a heavenly vehicle, that made a terrible noise and stank, and white-skinned creatures carrying weapons that spat fire. The miraculous visit is fixed and handed down for all time. When the father tells it to his son, the heavenly bird obviously does not get any smaller, and the creatures that got out of it become weirder,

stronger, and more imposing. These and many other embellishments will be added to the story. But the premise for the glorious legend was the actual landing of the helicopter. It did land in the clearing in the jungle and the pilots did climb out of it. From that moment the event is perpetuated in the mythology of the tribe.

Certain things cannot be made up. I should not be ransacking our prehistory for space travelers and heavenly aircraft if accounts of such apparitions appeared in only two or three ancient books. But when in fact nearly all the texts of the primitive peoples all over the globe tell the same story, I feel I must try to explain the objective thrust concealed in their pages.

"Son of man, thou dwellest in the midst of a rebellious house, which have eyes to see, and see not; they have ears to hear, and hear not . . ." (Ezekiel 12:2).

We know that all the Sumerian gods had their counterparts in certain stars. There is supposed to have been a statue to Marduk (Mars), the highest of the gods, that weighed 800 talents of pure gold. If we are to believe Herodotus, that is equivalent to more than 48,000 pounds of gold. Ninurta (Sirius) was judge of the universe and passed sentence on mortal men. There are cuneiform tablets which were addressed to Mars, to Sirius, and to the Pleiades. Time and again Sumerian hymns and prayers mention divine weapons, the form and effect of which must have been completely senseless to the people of those days. A panegyric to Mars says that he made fire rain down and destroyed his enemies with a brilliant lightning flash. Inanna is described as she traverses the heavens, radiating a frightful blinding gleam and annihilating the houses of the enemy. Drawings and even the model of a home have been found resembling a prefabricated atomic bunker: round and massive, with a single strangely framed aperture. From the same period, about 3000 B.C., archaeologists have found a model of

a team with chariot and driver, as well as two sportsmen wrestling, all of immaculate craftsmanship. The Sumerians, it has been proved, were masters of applied art. Then why did they model a clumsy bunker, when other excavations at Babylon or Uruk have brought much subtler works to light? Quite recently a whole Sumerian library of about 60,000 clay tablets was found in the town of Nippur, 95 miles south of Baghdad. We now possess the oldest account of the Flood, engraved on a tablet in six colums. Five antediluvian cities are named on the tablets: Eridu, Badtibira, Larak, Sitpar, and Shuruppak. Two of these cities have not yet been discovered. On these tablets, the oldest deciphered to date, the Noah of the Sumerians is called Ziusudra. He is supposed to have lived in Shuruppak and also to have built his ark there. So we now possess an even older description of the Flood than the one in the Epic of Gilgamesh. No one knows whether new finds will not produce still earlier accounts.

The men of the ancient cultures seem to have been almost obsessed with the idea of immortality or rebirth. Servants and slaves obviously lay down voluntarily in the tomb with their masters. In the burial chamber of Shub-At, no less than seventy skeletons lay next to each other in perfect order. Without the least sign of violence, sitting or lying in their brilliantly colored robes, they awaited the death which must have come swiftly and painlessly—perhaps by poison. With unshakable conviction, they looked forward to a new life beyond the grave with their masters. But who put the idea of rebirth into the heads of these heathen peoples?

The Egyptian pantheon is just as confusing. The ancient texts of the people on the Nile also tell of mighty beings who traversed the firmament in boats. A cuneiform text to the sun god Ra runs: "Thou couplest under the stars and the moon, thou drawest the ship of Aten in heaven and on earth like the tirelessly revolving stars and the stars at the North Pole that do not set."

Here is an inscription from a pyramid: "Thou art he who directs the sun ship of millions of years."

Even if the old Egyptian mathematicians were very advanced, it is odd that they should speak of millions of years in connection with the stars and a heavenly ship. What does the Mahabharata say? "Time is the seed of the universe."

In Memphis the god Ptah handed the king two models with which to celebrate the anniversaries of his reign and commanded him to celebrate the said anniversaries for six times a hundred thousand years. When the god Ptah came to give the king the models he appeared in a gleaming heavenly chariot and afterward disappeared over the horizon in it. Today representations of the winged sun and a soaring falcon carrying the sign of eternity and eternal life can still be found on doors and temples at Idfu. There is no known place in the world where such innumerable illustrations of winged symbols of the gods are preserved as in Egypt.

Every tourist knows the Island of Elephantine with the famous Nilometer at Aswan. The island is called Elephantine even in the oldest texts, because it was supposed to resemble an elephant. The texts were quite right—the island does look like an elephant. But how did the ancient Egyptians know that? This shape can be recognized only from an airplane at a great height, for there is no hill offering a view of the island that would prompt anyone to make the comparison.

A recently discovered inscription on a building at Idfu says that the edifice is of supernatural origin. The ground plan was drawn by the deified being Im-Hotep. Now this Im-Hotep was a very mysterious and clever personality—the Einstein of his time. He was priest, scribe, doctor, architect, and philosopher rolled into one. In this ancient world, the age of Im-Hotep, according to archaeolo-

gists, the only tools the people could have used for working stone were wooden wedges and copper, neither of which is suitable for cutting up granite blocks. Yet the brilliant Im-Hotep built the step pyramid of Sakkara for his king, who was called Zoser. This 197-foot-high edifice is built with a mastery that Egyptian architects were never quite able to equal afterward. The structure, surrounded by a wall 33 feet high and 1,750 feet long, was called the House of Eternity by Im-Hotep. He had himself buried in it, so that the gods could wake him on their return.

We know that all the pyramids were laid out according to the positions of certain stars. Is not this knowledge a bit embarrassing in view of the fact that we have very little evidence of Egyptian astronomy? Sirius was one of the few stars they took an interest in. But this very interest in Sirius seems rather peculiar, because seen from Memphis, Sirius can be observed only in the early dawn just above the horizon when the Nile floods begin. To fill the measure of confusion to overflowing, there was an accurate calendar in Egypt 4,221 years before our era! This calendar was based on the rise of Sirius (1st Tout = July 19) and gave annual cycles of more than 32,000 years.

Admittedly the old astronomers had plenty of time to observe the sun, the moon, and the stars, year in, year out, until they finally decided that all the stars stand in the same place again after approximately 365 days. But surely it was quite absurd to base the first calendar on Sirius when it would have been easier to use the sun and the moon, besides leading to more accurate results. Presumably the Sirius calendar is a built-up system, a theory of probabilities, because it could never predict the appearance of the star. If Sirius appeared on the horizon at dawn at the same time as the Nile flood, it was pure coincidence. A Nile flood did not happen every year, nor did every Nile flood take place on the

same day. In which case, why a Sirius calendar? Is there an old tradition here, too? Was there a text or a promise which was carefully guarded by the priesthood?

The tomb in which a gold necklace and the skeleton of an entirely unknown animal were found probably belonged to King Udimu. Where did the animal come from? How can we explain the fact that the Egyptians had a decimal system already at the beginning of the first dynasty? How did such a highly developed civilization arise at such an early date? Where do objects of copper and bronze originate as early as the beginning of the Egyptian culture? Who gave them their incredible knowledge of mathematics and a ready-made writing?

Before we deal with some monumental buildings which raise innumerable questions, let us take another brief glance at the old texts.

Where did the narrators of *The Thousand and One Nights* get their staggering wealth of ideas? How did anyone come to describe a lamp from which a magician spoke when the owner wished?

What daring imagination invented the "Open, Sesame!" incident in the tale of Ali Baba and the forty thieves?

Of course, such ideas no longer astonish us today, for the television set shows us talking pictures at the turn of a switch. And as the doors of most large department stores open by photocells, even the "Open, Sesame!" incident no longer conceals any special mystery. Nevertheless the imaginative power of the old storytellers was so incredible that the books of contemporary writers of science fiction seem banal in comparison. So it must be that the ancient storytellers had a store of things already seen, known, and experienced ready at hand to spark off their imagination!

In the legendary and sagalike world of intangible cultures which as yet offer to us no fixed points of reference, we are on still shakier ground, and things become even more confusing.

Naturally the Icelandic and Old Norwegian traditions also mention "gods" who travel in the sky. The goddess Frigg has a maidservant called Gna. The goddess sends her handmaid to different worlds on a steed which rises in the air above land and sea. The steed is called "Hoof-thrower," and once, says the saga, Gna met some strange creatures high in the air. In the *Alwislied* different names are given to the earth, the sun, the moon, and the universe depending on whether they are seen from the point of view of men, "gods," giants, or dwarfs. How on earth could people in the dim past arrive at different perceptions of one and the same thing, when the horizon was very limited?

Although the scholar Snorri Sturluson did not write down the Nordic and Old Germanic legends, sagas, and songs until about A.D. 1200, they are known to be some thousands of years old. In these writings the symbol of the world is often described as a disc or a ball—remarkably enough—and Thor, the leader of the gods, is always shown with a hammer, the destroyer. Herbert Kühn supports the view that the word "hammer" means "stone," dates from the Stone Age, and was transferred to bronze and iron hammers only later. Consequently Thor and his hammer symbol must have been very ancient and probably do go back to the Stone Age. Moreover, the word "Thor" in the Indian (Sanscrit) legends is "Tanayitnu"; this could be more or less rendered as "the Thunderer." The Nordic Thor, god of gods, is the lord of the Germanic *Wannen,* who makes the skies unsafe.

When arguing about the entirely new aspects that I introduce into investigation of the past, the objection might be made that it is not possible to compile everything in the ancient traditions that points to heavenly apparitions into a sequence of proofs of prehistoric space travel. But that is not what I am doing. I am simply referring to passages in very ancient texts that have no place in the working hypothesis in use up to the present. I am drilling away at those ad-

mittedly awkward spots in which scribes, translators, and copyists could have had no idea of the sciences and their products. I also would be quite prepared to consider the translations wrong and the copies not accurate enough if these same false, fancifully embellished traditions were not accepted in their entirety as soon as they can be fitted into the framework of some religion or other. It is unworthy of a scientific investigator to deny something when it upsets his working hypothesis and accept it when it supports his theory. Imagine the shape my theory would take and the strength it would gain if new translations made with a "space outlook" existed!

To help us patiently forge the chain of our thesis a little further, scrolls with fragments of apocalyptic and liturgical texts were recently found near the Dead Sea. Once again, in the Apocryphical Books of Abraham and Moses, we hear about a heavenly chariot with wheels, which spits fire, whereas similar references are lacking in the Ethiopian and Slavic Book of Enoch.

"Behind the being I saw a chariot which had wheels of fire, and every wheel was full of eyes all around, and on the wheels was a throne and this was covered with fire that flowed around it" (Apocryphal Book of Abraham 18:11–12).

According to Gershom Scholem's explanation, the throne and chariot symbolism of the Jewish mystics corresponded roughly to that of the Hellenistic and early Christian mystics when they talk about *pleroma* (abundance of light). That is a respectable explanation, but can it be accepted as scientifically proved? May we simply ask what would be the case if some people had really seen the fiery chariot that is described over and over again? A secret script was used very frequently in the Qumran scrolls; among the documents in the fourth cave different kinds of characters alternate in one and the same astrological work. An astronomical observation

bears the title: "Words of the judicious one which he has addressed to all sons of the dawn."

But what is the crushing and convincing objection to the possibility that real fiery chariots were described in the ancient texts? Surely not the vague and stupid assertion that fiery chariots cannot have existed in antiquity! Such an answer would be unworthy of the men I am trying to force to face new alternatives with my questions. Lastly, it is by no means so long ago that reputable scholars said that no stones (meteors) could fall from the sky, because there were no stones in the sky. Even nineteenth-century mathematicians came to the conclusion—convincing in their day—that a railway train would not be able to travel faster than 21 miles an hour because if it did the air would be forced out of it and the passengers would suffocate. Less than a hundred years ago it was "proved" that an object heavier than air would never be able to fly.

A review in a reputable newspaper classed Walter Sullivan's book *We Are Not Alone* as science fiction and said that even in the most distant future it would be quite impossible to reach, say, Epsilon Eridani or Tau Ceti; even the effect of a shift in time or deep-freezing the astronauts could never overcome the barriers of the inconceivable distances.

It is a good thing that there were always enough bold visionaries oblivious to contemporary criticism in the past. Without them there would be no worldwide railway network today, with trains traveling at 124 miles an hour and more. (N.B.: Passengers die at more than 21 miles per hour!) Without them there would be no jet aircraft today, because they would certainly fall to the ground. (Things that are heavier than air cannot fly!) And there would be no moon rockets. (Man cannot leave his own planet!) There are so many, many things that would not exist but for the visionaries!

A number of scholars would like to stick to the so-called realities. In so doing they are too ready and willing to forget that what is reality today may have been the Utopian dream of a visionary yesterday. We owe a considerable number of all the epoch-making discoveries that our age thinks of as realities to lucky chances, not to steady systematic research. And some of them stand to the credit of the "serious visionaries" who overcame restricting prejudice with their bold speculations. For example, Heinrich Schliemann accepted Homer's *Odyssey* as more than stories and fables and discovered Troy as a result.

We still know too little about our past to be able to make a definite judgment about it. New finds may solve unprecedented mysteries; the reading of ancient narratives is capable of turning whole worlds of realities upside down. Incidentally, it is obvious to me that more old books were destroyed than are preserved. There is supposed to have been a book in South America that contained all the wisdom of antiquity; it is reputed to have been destroyed by the sixty-third Inca ruler, Pachacuti IV. In the library of Alexandria 500,000 volumes belonging to the learned Ptolemy Soter contained all the traditions of mankind; the library was partly destroyed by the Romans, and the rest was burned on the orders of Caliph Omar centuries later. An incredible thought that invaluable and irreplaceable manuscripts were used to heat the public baths of Alexandria!

What became of the library of the temple at Jerusalem? What became of the library of Pergamon, which is supposed to have housed 200,000 works? When the Chinese Emperor Chi-Huang ordered the destruction of a mass of historical, astronomical, and philosophical books for political reasons in 214 B.C., what treasures and secrets went with them? How many texts did the converted Paul cause to be destroyed at Ephesus? And we cannot even imagine the enormous wealth of literature about all branches of knowledge

that has been lost to us owing to religious fanaticism. How many thousands of irretrievable writings did monks and missionaries burn in South America in their blind religious zeal?

That happened hundreds and thousands of years ago. Has mankind learned anything as a result? Only half a century ago Hitler had books burned in the public squares, and as recently as 1966 the same thing happened in China during Mao's kindergarten revolution. Thank heavens that today books do not exist in single copies, as in the past.

The texts and fragments still available transmit a great deal of knowledge from the remote past. In all ages the sages of a nation knew that the future would always bring wars and revolutions, blood and fire. Did this knowledge perhaps lead these sages to hide secrets and traditions from the mob in the colossal buildings of their period or to preserve them from possible destruction in a safe place? Have they "hidden" information or accounts in pyramids, temples, and statues, or bequeathed them in the form of ciphers so that they would withstand the ravages of time? We certainly ought to test the idea, for farsighted contemporaries of our own day have acted in this way—for the future.

In 1965 Americans buried in the soil of New York two time capsules so constituted that they could withstand the very worst that this earth could offer in the way of calamities for 5,000 years. These time capsules contained news that we want to transmit to posterity, so that some day those who strive to illuminate the darkness surrounding the past of their forefathers will know how we lived. The capsules are made of a metal that is harder than steel; they can survive even an atomic explosion. In addition to daily news, the capsules contain photographs of cities, ships, automobiles, aircraft, and rockets; they house samples of metals and plastics, of fabrics, threads, and cloths; they hand down to posterity objects in everyday use such as coins, tools,

and toilet articles; books about mathematics, medicine, physics, biology, and astronautics are preserved on microfilm. In order to complete this service for some remote and unknown future race, the capsules also contain a "key," a book with the help of which all the written material can be translated into the languages of the future.

A group of engineers from Westinghouse Electric had the idea of presenting the time capsules to posterity. John Harrington invented the ingenious decoding system for generations yet unknown. Lunatics? Visionaries? I find the realization of this project beneficial and reassuring. It's nice to know that there are men today who think 5,000 years ahead! The archaeologists of some remote future age will not find things any easier than we did. For after an atomic conflagration none of the world's libraries will be of any use, and all the achievements that make us so proud will not be worth twopence—because they have disappeared, because they have been destroyed, because they have been atomized. An atomic conflagration which ravages the earth is not required to justify the New Yorkers' imaginative action. A shifting of the earth's axis by a few degrees would cause inundations on an unprecedented and irresistible scale—in any case they would swallow up every single written word. Who is arrogant enough to assert that the sages of old could not have conceived the same sort of idea as the far-sighted New Yorkers?

Undoubtedly the strategists of an A-bomb and H-bomb war will not direct their weapons against Zulu villages and harmless Eskimos. They will use them against the centers of civilization. In other words, the radioactive chaos will fall on the advanced, most highly developed peoples. Savages and primitive peoples far away from the centers of civilization will be left. They will not be able to transmit our culture or even give an account of it, because they have never taken part in it. Even intelligent men and visionaries who

tried to preserve an underground library will not have been able to help the future a great deal. "Normal" libraries will be destroyed in any case, and the surviving primitive peoples will know nothing of the hidden secret libraries. Whole regions of the globe will become burning deserts, because radiation lasting for centuries will not allow any plants to grow. The survivors will presumably be mutated, and after 2,000 years nothing will be left of the annihilated cities. The unbridled power of nature will eat its way through the ruins; iron and steel will rust and crumble into dust.

And everything will begin again! Man may embark on his adventure a second or even a third time. Perhaps once again he will take so long to reemerge as a civilized being that the secrets of old traditions and texts will be closed to him. Five thousand years after the catastrophe, archaeologists could claim that twentieth-century man was not yet familiar with iron, because, understandably enough, they would not find any, no matter how hard they dug. Along the Russian frontiers they would find miles of concrete tank traps, and they would explain that such finds undoubtedly indicated astronomical lines. If they were to find cassettes with tapes, they would not know what to do with them; they would not even be able to distinguish between played and unplayed tapes. And perhaps those tapes might hold the solution to many, many puzzles! Texts which spoke of gigantic cities with houses several hundred feet high would be pooh-poohed, because such cities could not have existed. Scholars would take the London Tube tunnels for a geometrical curiosity or an astonishingly well-conceived drainage system. And they might keep on coming across reports which described how men flew from continent to continent with giant birds and referred to extraordinary fire-spitting ships which disappeared into the sky. That would also be dismissed as mythology, because such great birds and fire-spitting ships could not have existed.

Things would be made very difficult for the translators in the year 7000. The facts about a world war in the twentieth century that they would discover from fragmentary texts would sound quite incredible. But when the speeches of Marx and Lenin fell into their hands, they would at last be able to make two high priests of this incomprehensible age the center of a religion. What a piece of luck!

People would be able to explain a great deal, provided sufficient clues were still in existence. Five thousand years is a long time. It is pure caprice on nature's part that she allows dressed blocks of stone to survive for 5,000 years. She does not deal so carefully with the thickest iron girders.

In the courtyard of a temple in Delhi there exists, as I have already mentioned, a column made of welded iron parts that has been exposed to weathering for more than 4,000 years without showing a trace of rust. In addition it is unaffected by sulphur or phosphorus. Here we have an unknown alloy from antiquity staring us in the face. Perhaps the column was cast by a group of farsighted engineers who did not have the resources for a colossal building but wanted to bequeath to posterity a visible, time-defying monument to their culture.

It is an embarrassing story: in advanced cultures of the past we find buildings that we cannot copy today with the most modern technical means. These stone masses are there; they cannot be argued away. Because that which ought not to exist cannot exist, there is a frantic search for "rational" explanations. Let us take off our blinkers and join the search. . . .

7

Ancient Marvels or Space Travel Centers?

TO the north of Damascus lies the terrace of Baalbek—a platform built of stone blocks, some of which have sides more than 65 feet long and weigh nearly 2,000 tons. Until now archaeologists have not been able to give a convincing explanation why, how, and by whom the terrace of Baalbek was built. However, Russian Professor Agrest considers it possible that the terrace is the remains of a gigantic airfield.

If we meekly accept the neat package of knowledge that the Egyptologists serve up to us, ancient Egypt appears suddenly and without transition with a fantastic ready-made civilization. Great cities and enormous temples, colossal statues with tremendous expressive power, splendid streets flanked by magnificent sculptures, perfect drainage systems, luxurious tombs carved out of the rock, pyramids of overwhelming size—these and many other wonderful things shot out of the ground, so to speak. Genuine miracles in a country that is suddenly capable of such achievements without recognizable prehistory!

Fertile agricultural land exists only in the Nile Delta and on small strips to the left and right of the river. Yet experts

now estimate the number of inhabitants at the time of the building of the Great Pyramid at 50,000,000. (A figure, incidentally, that flagrantly contradicts the 20,000,000 considered to be the total population of the world in 3000 B.C.!)

With such enormous estimates a couple of million men more or less does not matter. But one thing is clear—they all had to be fed. There were not only a host of construction workers, stone masons, engineers, and sailors, there were not only hundreds of thousands of slaves, but also a well-equipped army, a large and pampered priesthood, countless merchants, farmers, and officials, and last but not least the Pharaonic household living on the fat of the land. Could they *all* have lived on the scanty yields of agriculture in the Nile Delta?

I shall be told that the stone blocks used for building the temple were moved on rollers. In other words, wooden rollers! But the Egyptians could scarcely have felled and turned into rollers the few trees, mainly palms, that then (as now) grew in Egypt, because the dates from the palms were urgently needed for food and the trunks and fronds were the only things giving shade to the dried-up ground. But they must have been wooden rollers, otherwise there would not be even the feeblest technical explanation of the building of the pyramids. Did the Egyptians import wood? In order to import wood there must have been a sizable fleet, and even after it had been landed in Alexandria the wood would have had to be transported up the Nile to Cairo. Since the Egyptians did not have horses and carts at the time of the building of the Great Pyramid, there was no other possibility. The horse-and-cart was not introduced until the seventeenth dynasty, about 1600 B.C. My kingdom for a convincing explanation of the transport of the stone blocks! Of course, the scholars say that wooden rollers were needed. . . .

There are many problems connected with the technology of the pyramid builders and no genuine solutions.

How did the Egyptians carve tombs out of the rock? What resources did they have in order to lay out a maze of galleries and rooms? The walls are smooth and mostly decorated with paintings in relief. The shafts slope down into the rocky soil; they have steps built in the best tradition of craftsmanship that lead to the burial chambers far below. Hordes of tourists stand gaping in amazement at them, but none of them gets an explanation of the mysterious technique used in their excavation. Yet it is firmly established that the Egyptians were masters of the art of tunneling from the earliest times, for the old rock-cut tombs are worked in exactly the same way as the more recent ones. There is no difference between the tomb of Tety from the sixth dynasty and the tomb of Rameses I from the New Kingdom, although there is a minimum of 1,000 years between the building of the two tombs. Obviously the Egyptians had not learned anything new to add to their old technique. In fact the more recent edifices tend increasingly to be poor copies of their ancient models.

The tourist who bumps his way to the pyramid of Cheops to the west of Cairo on a camel called Wellington or Napoleon, depending on his nationality, gets the strange sensation in the pit of his stomach that relics of the mysterious past always produce. The guide tells him that a pharaoh had a burial place built here. And with that bit of rehashed erudition he rides homeward, after taking some impressive photographs. The pyramid of Cheops, in particular, has inspired hundreds of crazy and untenable theories. In the 600-page book *Our Inheritance in the Great Pyramid,* by Charles Piazzi Smith, published in 1864, we can read about many hair-raising links between the pyramid and our globe.

Yet even after a highly critical examination, it still contains some facts that should stimulate us to reflection.

It is well known that the ancient Egyptians practiced a solar religion. Their sun god, Ra, traveled through the heav-

ens in a bark. Pyramid texts of the Old Kingdom even describe heavenly journeys by the king, obviously made with the help of the gods and their boats. So the gods and kings of the Egyptians were also involved with flying. . . .

Is it really a coincidence that the height of the pyramid of Cheops multiplied by a thousand million—98,000,000 miles—corresponds approximately to the distance between the earth and sun? Is it a coincidence that a meridian running through the pyramids divides continents and oceans into two exactly equal halves? Is it coincidence that the area of the base of the pyramid divided by twice its height gives the celebrated figure $\pi = 3.14159$? Is it coincidence that calculations of the weight of the earth were found and is it also coincidence that the rocky ground on which the structure stands is carefully and accurately leveled?

There is not a single clue to explain why the builder of the pyramid of Cheops, the Pharaoh Khufu, chose that particular rocky terrain in the desert as the site for his edifice. It is conceivable that there was a natural cleft in the rock which he made use of for the colossal building, while another explanation, though only a feeble one, may be that he wanted to watch the progress of the work from his summer palace. Both reasons are against all common sense. In the first case it would certainly have been more practical to locate the building site nearer the eastern quarries in order to shorten transport distances, and second, it is hard to imagine that the pharaoh wanted to be disturbed year after year by the din that filled building sites day and night even in those days. Since there is so much to be said against the textbook explanations of the choice of site, one might reasonably ask whether the "gods" did not have their say here, too, even if it was by way of the priesthood. But if that explanation is accepted, there is one more important proof of my theory of the Utopian past of mankind. For the pyramid not only divides continents and oceans into two equal halves; it

also lies at the center of gravity of the continents. If the facts noted here are not coincidences—and it seems extremely difficult to believe that they are—then the building site was chosen by beings who knew all about the spherical shape of the earth and the distribution of continents and seas. In this connection let us not forget Piri Reis' maps! It cannot all be coincidence or be explained away as fairy stories.

With what power, with what "machines," with what technical resources was the rocky terrain leveled at all? How did the master builders drive the tunnels downward? And how did they illuminate them? Neither here nor in the rock-cut tombs in the Valley of Kings were torches or anything similar used. There are no blackened ceilings or walls or even the slightest evidence that traces of blackening have been removed. How and with what were the stone blocks cut out of the quarries? With sharp edges and smooth sides? How were they transported and joined together to the thousandth of an inch? Once again there is a wealth of explanations for anyone to choose from: inclined planes and tracks along which the stones were pushed, scaffolding and ramps. And naturally the labor of many hundreds of thousands of Egyptian slaves: fellahin, builders, and craftsmen.

None of these explanations stands up to a critical examination. The Great Pyramid is (and remains?) visible testimony of a technique that has never been understood. Today, in the twentieth century, no architect could build a copy of the pyramid of Cheops, even if the technical resources of every continent were at his disposal.

2,600,000 gigantic blocks were cut out of the quarries, dressed and transported, and fitted together on the building site to the nearest thousandth of an inch. And deep down inside, in the galleries, the walls were painted in colors.

The site of the pyramid was a whim of the pharaoh.

The unparalleled, "classical" dimensions of the pyramid occurred to the master builder by chance.

Several hundred thousand workers pushed and pulled blocks weighing twelve tons up a ramp with (nonexistent) ropes on (nonexistent) rollers.

This host of workers lived on (nonexistent) grain.

They slept in (nonexistent) huts which the pharaoh had built outside his summer palace.

The workers were urged on by an encouraging "Heave-ho" over a (nonexistent) loudspeaker, and so the twelve-ton blocks were pushed skyward.

If the industrious workers had achieved the extraordinary daily piece rate of ten blocks piled on top of each other, they would have assembled the 2,600,000 stone blocks into the magnificent stone pyramid in about 250,000 days—664 years. Yes, and don't forget that the whole thing came into being at the whim of an eccentric king who never lived to see the completion of the edifice he had inspired.

Of course one must not even suggest that this theory, so seriously advanced, is ridiculous. Yet who is so ingenuous as to believe that the pyramid was nothing but the tomb of a king? From now on, who will consider the transmission of mathematical and astronomical signs as pure chance?

Today the Great Pyramid is undisputedly attributed to the Pharaoh Khufu as inspirer and builder. Why? Because all the inscriptions and tablets refer to Khufu. It seems obvious to me that the pyramid cannot have been erected during a single lifetime. But what if Khufu forged the inscriptions and tablets that are supposed to proclaim his fame? That was quite a popular procedure in antiquity, as many buildings bear witness. Whenever a dictatorial ruler wanted the fame for himself alone, he gave orders for this process to be carried out. If that *was* the case, then the pyramid existed long before Khufu left his visiting card.

In the Bodleian Library at Oxford there is a manuscript in which the Coptic author Mas-Udi asserts that the Egyptian King Surid had the Great Pyramid built. Oddly enough,

this Surid ruled in Egypt before the Flood. And this wise King Surid ordered his priests to write down the sum total of their wisdom and conceal the writings inside the pyramid. So, according to the Coptic tradition, the pyramid was built before the Flood.

Herodotus confirms such a supposition in Book II of his *History*. The priests of Thebes had shown him 341 colossal statues, each of which stood for a high-priestly generation over a period of 11,340 years. Now we know that every high priest had his statue made during his own lifetime; and Herodotus also tells us that during his stay in Thebes one priest after another showed him his statue as a proof that the son had always followed the father. The priests assured Herodotus that their statements were very accurate, because they had written everything down for many generations, and they explained that every one of these 341 statues represented a generation. Before these 341 generations the gods had lived among men, and since then no god had visited them again in human form.

The historical period of Egypt is usually estimated at about 6,500 years. Then why did the priests lie so shamelessly to the traveler Herodotus about their 11,340 years? And why did they so expressly emphasize that no gods had dwelt among them for 341 generations? These precise details would have been completely pointless if "gods" had not really lived among men in the remote past!

We know next to nothing about the how, why, and when of the building of the pyramid. An artificial mountain, some 490 feet high and weighing 6,500,000 tons, stands there as evidence of an incredible achievement, and this monument is supposed to be nothing more than the burial place of an extravagant king! Anyone who can believe that explanation is welcome to it. . . .

Mummies, equally incomprehensible and not yet convincingly explained, stare at us from the remote past as if

they held some magic secret. Various peoples knew the technique of embalming corpses, and archaeological finds favor the supposition that prehistoric beings believed in corporeal return to a second life. That interpretation would be acceptable if there was even the remotest evidence of a belief in a corporeal return in the religious philosophy of antiquity! If our primitive ancestors had believed in only a spiritual return, they would scarcely have gone to such trouble with the dead. But finds in Egyptian tombs provide example after example of the preparation of embalmed corpses for a corporeal return.

What the evidence says, what visible proof says, cannot be so absurd! Drawings and sagas actually indicated that the "gods" promised to return from the stars in order to awaken the well-preserved bodies to new life. That is why the provisioning of the embalmed corpses in the burial chambers took such a practical form and was intended for a life on this side of the grave. Otherwise what were they supposed to have done with money, jewelry, and their favorite articles? And as they were even provided in the tomb with some of their servants, who were unquestionably buried alive, the point of all the preparations was obviously the continuation of the old life in a new life. The tombs were tremendously durable and solid, almost atom-bomb-proof; they could survive the ravages of all the ages. The valuables left in them, gold and precious stones, were virtually indestructible. I am not concerned here with discussing the later abuses of mummification. I am only concerned with the question: Who put the idea of corporeal rebirth into the heads of the heathen? And whence came the first audacious idea that the cells of the body had to be preserved so that the corpse, preserved in a very secure place, could be awakened to new life after thousands of years?

So far this mysterious reawakening complex has only been considered from the religious point of view. But supposing the pharaoh, who certainly knew more about the nature

and customs of the "gods" than his subjects, had these possibly quite crazy ideas? "I must make a burial place for myself that cannot be destroyed for millennia and is visible far across the country. The gods promised to return and wake me up (or doctors in the distant future will discover a way to restore me to life again)."

What have we to say about that in the space age?

In his book *The Prospect of Immortality,* published in 1965, physican and astronomer Robert C. W. Ettinger suggests a way in which twentieth-century men can have ourselves frozen so that our cells can go on living from the medical and biological point of view, but slowed down a billionfold. For the present this idea may still sound Utopian, but in fact every big clinic today has a "bone bank" which preserves human bones in a deep-frozen condition for years and makes them serviceable again when required. Fresh blood—this too is a universal practice—can be kept for an unlimited time at minus 196° C, and living cells can be stored almost indefinitely at the temperature of liquid nitrogen. Did the pharaoh have a fantastic idea which will soon be realized in practice?

You must read what follows twice to grasp the fantastic implications of the result of the next piece of scientific research. In March, 1963, biologists of the University of Oklahoma confirmed that the skin cells of the Egyptian Princess Mene were capable of living. And Princess Mene has been dead for several thousand years!

There have been finds in many places of mummies which are preserved so completely and intact that they seem to be alive. Glacier mummies left by the Incas survived the ages and theoretically they are capable of living. Utopia? In the summer of 1965 Russian television showed two dogs which had been deep-frozen for a week. On the seventh day they were thawed out again and—hey, presto!—they went on living as cheerfully as ever!

Americans—and this is no secret—are seriously con-

cerned, as part of their space program, with the problem of how to freeze astronauts of the future for their long journeys to distant stars.

Dr. Ettinger, often scoffed at today, prophesies a remote future in which men will not be consumed by fire or eaten by worms—a future in which bodies, frozen in deep-freeze cemeteries or deep-freeze bunkers, await the day when advances in medical science can remove the cause of their death and bring their bodies to new life. One can see the terrifying vision of an army of deep-frozen soldiers who will be thawed out as necessary in case of war. A really horrifying idea.

But what connection have mummies with our theory of space travelers in the remote past? Am I dragging proofs in willy-nilly?

I ask: How did the ancients know that the body cells continue to live slowed down a billionfold after special treatment?

I ask: Where did the idea of immortality come from, and how did people get the concept of corporeal reawakening in the first place?

The majority of ancient peoples knew the technique of mummification, and the rich people actually practiced it. I am not concerned here with this demonstrable fact, but with solving the problem of where the idea of a reawakening, a return to life, originated. Did the idea occur to some king or tribal prince purely by chance or did some prosperous citizen watch "gods" treating their corpses with a complicated process and preserving them in bomb-proof sarcophagi? Or did some "gods" (space travelers) transmit to a quick-witted prince of royal blood their knowledge of how corpses can be reawakened after a special treatment?

These speculations require confirmation from contemporary sources. In a few hundred years mankind will have a mastery of space travel that is inconceivable today. Travel agencies will offer trips to the planets, with precise de-

parture and return dates, in their brochures. Obviously a prerequisite for this mastery is that all branches of science keep pace with the development of space travel. Electronics and cybernetics alone will not do the trick. Medicine and biology will make their contribution by finding out ways of lengthening the vital functions of human beings. Today this department of space research is also working in top gear. Here we must ask ourselves: Did space travelers in prehistory already possess knowledge that we must gain anew? Did unknown intelligences already know the methods with which to treat bodies so that they could be revived in so many thousand years? Perhaps the "gods," being shrewd, had an interest in "preserving" at least one dead man with all the knowledge of his time so that some day he could be questioned about the history of his generation? Who can tell? Is it not possible that such an interrogation by "gods" who came back has already taken place?

In the course of the centuries, mummification, originally a solemn matter, became the fashion. Suddenly everyone wanted to be reawakened; suddenly everyone thought that he would come to new life so long as he did the same as his forefathers. The high priests, who actually did possess some knowledge of such reawakenings, did a great deal to encourage this cult, for their class did good business out of it.

I have already mentioned the physically impossible ages of the Sumerian kings and the biblical figures. I asked whether these people could not have been space travelers who prolonged their life-span through the effect of the time shift on interstellar flights just below the speed of light.

Are we perhaps getting a clue to the incredible age of the men named in the texts if we assume that they were mummified or frozen? If we follow this theory, then the unknown space travelers would have frozen leading personalities in antiquity—put them into an artificial deep sleep, as legends tell us—and taken them out of the drawer, thawed

them out, and conversed with them during subsequent visits. At the end of each visit it would have been the task of the priestly class appointed and instructed by the space travelers to prepare the living dead again and preserve them once more in giant temples until the "gods" returned.

Impossible? Ridiculous? It is mostly those people who feel that they are absolutely bound by the laws of nature who make the most stupid objections. Does not nature herself display brilliant examples of "hibernation" and reawakening?

There are species of fish which, after being frozen stiff, thaw out at milder temperatures and swim around again in the water. Flowers, larvae, and grubs not only go into hibernation but also reappear in the spring in lovely new garb.

Let me be my own devil's advocate. Did the Egyptians learn the possibility of mummification from nature? If that were the case, there ought to have been a cult of butterflies or cockchafers or at least a trace of such a cult. There is nothing of the kind. Underground tombs do contain gigantic sarcophagi with mummified animals, but given their climate the Egyptians could not have copied hibernation from animals.

Five miles from Helwan lie more than 5,000 tombs of different sizes which all date to the time of the first and second dynasties. These tombs show that the art of mummification is more than 6,000 years old.

In 1953 Professor Emery discovered a large tomb in the archaic cemetery of North Sakkara that is attributed to a pharaoh of the first dynasty. Apart from the main tomb there were 72 other tombs, arranged in three rows, in which lay the bodies of the servants who wanted to accompany their king in the new world. No trace of violence is visible on the bodies of the 64 young men and 8 young women. Why did these 72 allow themselves to be walled up and killed?

Belief in a second life beyond the grave is the best-known

and also the simplest explanation of this phenomenon. In addition to gold and jewelry the pharaoh was provided in the tomb with grain, oil, and spices which were obviously intended as provisions for the life to come. Apart from grave robbers, the tombs were also opened by later pharaohs. In such cases the pharaoh found the provisions in the tomb of his ancestor well preserved. In other words the dead man had neither eaten them nor taken them into another world. And when the tomb was closed again, fresh supplies were placed in the vault, which was shut up, protected against thieves, and sealed with many traps. It seems obvious that the Egyptians believed in a reawakening in the distant future, not an immediate reawakening in the hereafter.

In June, 1954, also at Sakkara, a tomb was discovered that had not been robbed, for a chest containing jewels and gold lay in the burial chamber. The sarcophagus was closed with a sliding lid, instead of a removable one. On June 9 Dr. Goneim ceremonially opened the sarcophagus. It contained nothing. Absolutely nothing. Did the mummy decamp, leaving its jewels behind?

The Russian Rodenko discovered a grave, Kurgan V, fifty miles from the frontier of Outer Mongolia. This grave takes the form of a rocky hill that is faced internally with wood. All the burial chambers are packed with eternal ice, and as a result the contents of the grave were preserved in a state of deep-freeze. One of these chambers contained an embalmed man and a similarly treated woman. Both of them were provided with everything that they might have needed for a life to come: foodstuffs in dishes, clothes, jewels, and musical instruments. Everything was deep-frozen and in an excellent state of preservation, including the naked mummies. In one burial chamber scholars identified a rectangle containing four rows of six squares, each of which had a drawing inside it. The whole could be a copy of the stone carpet in the Assyrian palace at Nineveh! Strange sphinxlike figures with complicated horns on their heads and wings on

their backs are clearly visible, and their posture shows them to be aspiring skyward.

But motives for a second spiritual life can scarcely be based on the finds in Mongolia. The deep-freezing used in the graves there—for that is what the chambers faced with wood and filled with ice amount to—is too much of this world and obviously intended for terrestrial ends. Why, and this question keeps on worrying us, did the ancients think that bodies prepared in this way achieved a state which would make reawakening possible? That is a puzzle for the time being.

In the Chinese village of Wu Chuan is a rectangular tomb measuring 45 by 39 feet; in it lie the skeletons of 17 men and 24 women. Here, too, none of the skeletons shows signs of a violent death. There are glacier tombs in the Andes, ice tombs in Siberia, group and individual graves in China, Sumeria, and Egypt. Mummies have been found in the far north and in South Africa. And all the dead were supplied with the necessities for a new life, and all the tombs were so planned and built that they could survive for thousands of years.

Is it all mere coincidence? Are they all merely individual fancies, strange whims on the part of our ancestors? Or is there an ancient promise of corporeal return that is unknown to us? Who could have made it?

Some 10,000-year-old tombs were excavated at Jericho, and a number of 8,000-year-old heads, modeled in plaster of Paris, were found. That, too, is astonishing, for ostensibly this people did not know the techniques of pottery making. In another part of Jericho whole rows of round houses were discovered. The walls are curved inward at the top, like domes.

The omnipotent carbon isotope C-14, with the aid of which the age of organic substances can be determined, gives dates with a maximum of 10,400 years in this case. These scientifically determined dates agree fairly well with

the dates which the Egyptian priests transmitted. They said that their priestly ancestors had discharged their duties for more than 11,000 years. Is this only a coincidence, too?

Prehistoric stones at Lussac, France, form a particularly remarkable find. They show drawings of men dressed in completely modern style, with hats, jackets, and short trousers. Abbé Breuil says that the drawings are authentic, and his statement throws the whole of prehistory into confusion. Who engraved the stones? Who has enough imagination to conceive of a caveman dressed in skins who drew figures from the twentieth century on the walls?

Some really magnificent Stone Age paintings were found in 1940 in the Lascaux caves in the South of France. The paintings in this gallery are as lively and intact as if they had been done today, and two questions immediately spring to mind. How was this cave illuminated for the laborious work of the Stone Age artists, and why were the walls decorated with these astonishing paintings?

Let the people who consider these questions stupid explain the contradictions. If the Stone Age cavemen were primitive and savage, they could not have produced the astounding paintings on the cave walls. But if the savages were capable of painting these pictures, why should they not also have been able to build huts as shelter? The foremost authorities concede that animals had the ability to build nests and shelters millions of years ago. But it obviously does not fit into the working hypothesis to concede *homo sapiens* the same ability as long ago as that.

In the Gobi Desert, deep down below the ruins of Khara Khota—not far from those strange sand vitrifications which can only have taken place under the influence of tremendous heat—Professor Koslov found a tomb that is dated to about 12,000 years B.C. A sarcophagus contained the bodies of two rich men, and the sign of a circle bisected vertically was found on the sarcophagus.

In the Subis Mountains on the west coast of Borneo a

network of caves was found that had been hollowed out on a cathedral-like scale. Among these colossal finds there are fabrics of such fineness and delicacy that with the best will in the world one cannot imagine savages making them. Questions, questions, questions. . . .

The first doubts are beginning to insinuate themselves into sterotyped archaeological theory, but what we need to do is to force breaches in the thicket of the past. Landmarks must be set up again; wherever possible, a new series of fixed dates must be established.

Let me make it clear that I am not doubting the history of the last 2,000 years here. I am speaking solely and exclusively of the most remote antiquity, of the blackest darkness of time, which I am striving to illuminate by asking new questions.

Nor can I give any figures and dates showing when the visit of unknown intelligences from the universe began to influence our young intelligences. But I venture to doubt the current datings applied to the remote past. I would suggest, on tolerably good grounds, placing the incident I am concerned with in the Early Paleolithic Age—between 10,000 and 40,000 B.C. Our hitherto existing methods of dating, including C-14, which makes everyone so happy, leave great gaps as soon as we have to deal with periods of fewer than 5,000 years. The older the substance to be examined, the more unreliable the radiocarbon method is. Even recognized scholars have told me that they consider the C-14 method to be an out-and-out bluff, because if an organic substance is from 30,000 to 50,000 years old its age can be established anywhere between those limits.

These critical voices should be accepted only with limitations; nevertheless, a second dating method parallel to the C-14 method and based on the latest measuring apparatus would unquestionably be desirable.

8

Easter Island—Land of the Bird Men

THE first European seafarers who landed on Easter Island at the beginning of the eighteenth century could scarcely believe their eyes. On this little plot of earth, 2,350 miles from the coast of Chile, they saw hundreds of colossal statues lying scattered about all over the island. Whole mountain massifs had been transformed, steel-hard volcanic rock had been cut through like butter, and 10,000 tons of massive rocks lay in places where they could not have been dressed. Hundreds of gigantic statues, some of which are between 33 and 66 feet high and weigh as much as 50 tons, still stare challengingly at the visitor today—like robots which seem to be waiting solely to be set in motion again. Originally these colossuses also wore hats; but even the hats do not exactly help to explain the puzzling origin of the statues. The stone for the hats, which weighed more than ten tons apiece, was found at a different site from that used for the bodies, and in addition the hats had to be hoisted high in the air.

Wooden tablets, covered with strange hieroglyphs, were also found on some of the statues in those days. But today it is impossible to find more than ten fragments of those tablets

in all the museums in the world, and none of the inscriptions on those still extant has yet been deciphered.

Thor Heyerdahl's investigations of these mysterious giants produced three clearly distinguishable cultural periods, and the oldest of the three seems to have been the most perfect. Heyerdahl dates some charcoal remains that he found to about A.D. 400. It has not been proved whether the fireplaces and remains of bones had any connection with the stone colossuses. Heyerdahl discovered hundreds of unfinished statues near rock faces and on the edges of craters; thousands of stone implements, simple stone axes, lay around as if the work had been abandoned quite suddenly.

Easter Island lies far away from any continent or civilization. The islanders are more familiar with the moon and the stars than any other country. No trees grow on the island, which is a tiny speck of volcanic stone. The usual explanation, that the stone giants were moved to their present sites on wooden rollers, is not feasible in this case, either. In addition, the island can scarcely have provided food for more than 2,000 inhabitants. (A few hundred natives live on Easter Island today.) A shipping trade, which brought food and clothing to the island for the stonemasons, is hardly credible in antiquity. Then who cut the statues out of the rock, who carved them and transported them to their sites? How were they moved across country for miles without rollers? How were they dressed, polished, and erected? How were the hats, the stone for which came from a different quarry from that of the statues, put in place?

Even if people with lively imaginations have tried to picture the Egyptian pyramids being built by a vast army of workers using the "heave-ho" method, a similar method would have been impossible on Easter Island for lack of manpower. Even 2,000 men, working day and night, would not be nearly enough to carve these colossal figures out of the steel-hard volcanic stone with rudimentary tools—and

at least a part of the population must have tilled the barren fields, gone fishing, woven cloth, and made ropes. No, 2,000 men alone could not have made the gigantic statues. And a larger population is inconceivable on Easter Island. Then who did do the work? And how did they manage it? And why do the statues stand around the edge of the island and not in the interior? What cult did they serve?

Unfortunately, the first European missionaries on this tiny patch of earth helped to ensure that the island's dark ages stayed dark. They burned the tablets with hieroglyphic characters; they prohibited the ancient cults of the gods and did away with every kind of tradition. Yet thoroughly as the pious gentlemen went to work, they could not prevent the natives from calling their island the Land of the Bird Men, as they still do today. An orally transmitted legend tells us that flying men landed and lighted fires in ancient times. The legend is confirmed by sculptures of flying creatures with big, staring eyes.

Connections between Easter Island and Tiahuanaco automatically force themselves upon us. There as here, we find stone giants belonging to the same style. The haughty faces with their stoic expressions suit the statues—here as there. When Francisco Pizarro questioned the Incas about Tiahuanaco in 1532, they told him that no man had ever seen the city save in ruins, for Tiahuanaco had been built in the night of mankind. Traditions call Easter Island the "navel of the world." It is more than 3,125 miles from Tiahuanaco to Easter Island. How can one culture possibly have inspired the other?

Perhaps pre-Inca mythology can give us a hint here. In it the old god of creation, Viracocha, was an ancient and elemental divinity. According to tradition Viracocha created the world when it was still dark and had no sun; he sculpted a race of giants from stone, and when they displeased him, he sank them in a deep flood. Then he caused the sun and the

moon to rise above Lake Titicaca, so that there was light on earth. Yes, and then—read this closely—he shaped clay figures of men and animals at Tiahuanaco and breathed life into them. Afterward, he instructed these living creatures of his own creation in language, customs, and arts, and finally flew some of them to different continents which they were supposed to inhabit thenceforth. After this task the god Viracocha and two assistants traveled to many countries to check how his instructions were being followed and what results they had had. Dressed as an old man, Viracocha wandered over the Andes and along the coast, and often he was given a poor reception. Once, at Cacha, he was so annoyed by his welcome that in a fury he set fire to a cliff which began to burn up the whole country. Then the ungrateful people asked his forgiveness, whereupon he extinguished the flames with a single gesture. Viracocha traveled on, giving instructions and advice, and many temples were erected to him as a result. Finally he said good-bye in the coastal province of Manta and disappeared over the ocean, riding on the waves, but he said he intended to come back.

The Spanish conquistadors who conquered South and Central America came up against the sagas of Viracocha everywhere. Never before had they heard of gigantic white men who came from somewhere in the sky. Full of astonishment, they learned about a race of sons of the sun who instructed mankind in all kinds of arts and disappeared again. And in all the legends that the Spaniards heard, there was an assurance that the sons of the sun would return.

Although the American continent is the home of ancient cultures, our accurate knowledge of America is barely 1,000 years old. It is an absolute mystery to us why the Incas cultivated cotton in Peru in 3000 B.C., although they did not know or possess the loom. The Mayas built roads but did not use the wheel, although they knew about it. The fantastic five-strand necklace of green jade in the burial pyramid of

Tikal in Guatemala is a miracle. A miracle because the jade comes from China. The sculptures of the Olmecs are incredible. With their beautifully helmeted giant skulls, they can be admired only on the sites where they were found, for they will never be on show in a museum. No bridge in the country could stand their weight. We can move smaller "monoliths" weighing up to fifty tons with our modern lifting appliances and loaders, but when it comes to hundred-tonners like these our technology breaks down. But our ancestors could transport and dress them. How?

It even seems as if the ancient peoples took a special pleasure in juggling with stone giants over hill and dale. The Egyptians fetched their obelisk from Aswan, the architects of Stonehenge brought their stone blocks from southwest Wales and Marlborough, the stonemasons of Easter Island took their ready-made monster statues from a distant quarry to their present sites, and no one can say where some of the monoliths at Tiahuanaco come from. Our remote ancestors must have been strange people; they liked making things difficult for themselves and always built their statues in the most impossible places. Was it just because they liked a hard life?

I refuse to think that the artists of our great past were as stupid as that. They could just as easily have erected their statues and temples in the immediate vicinity of the quarries if an old tradition had not laid down where their works ought to be sited. I am convinced that the Inca fortress of Sacsahuamán was not built above Cuzco by chance, but rather because a tradition indicated the place as a holy spot. I am also convinced that in all the places where the most ancient monumental buildings of mankind were found the most interesting and important relics of our past lie still untouched in the ground, relics, moreover, which could be of tremendous importance for the further development of present-day space travel.

The unknown space travelers who visited our planet many thousands of years ago can hardly have been less farsighted than we think we are today. They were convinced that one day man would make the move out into the universe on his own initiative, using his own skills.

It is a well-known historical fact that the intelligences of our planet have constantly sought for kindred spirits, for life, for corresponding intelligences in the cosmos.

Present-day antennae and transmitters have broadcast the first radio impulses to unknown intelligences. When we shall receive an answer—in ten, fifteen, or a hundred years —we do not know. We do not even know which star we should beam our message at, because we have no idea which planet should interest us most. Where do our signals reach unknown intelligences similar to human beings? We do not know. Yet there is much to support the belief that the information needed to reach our goal is deposited in our earth for us. We are trying hard to neutralize the force of gravity; we are experimenting with elementary particles and antimatter. Are we also doing enough to find the data which are hidden in our earth, so that we can at last ascertain our original home?

If we take things literally, much that was once fitted into the mosaic of our past with great difficulty becomes quite plausible: not only the relevant clues in ancient texts but also the "hard facts" which offer themselves to our critical gaze all over the globe. Lastly, we have our reason to think with.

So it will be man's ultimate insight to realize that his justification for existence to date and all his struggles to advance really consisted in learning from the past in order to make himself ready for contact with the existence in space. Once that happens, the shrewdest, most die-hard individualist must see that the whole human task consists in colonizing the universe and that man's whole spiritual duty lies in perpet-

uating all his efforts and practical experience. Then the promise of the "gods" that peace will come on earth and that the way to heaven is open can come true.

As soon as the available authorities, powers, and intellects are devoted to space research, the results will make the absurdity of terrestrial wars abundantly clear. When men of all races, peoples, and nations unite in the supranational task of making journeys to distant planets technically feasible, the earth with all its mini-problems will fall back into its right relation with the cosmic processes.

Occultists can put out their lamps, alchemists destroy their crucibles, secret brotherhoods take off their cowls. It will no longer be possible to offer man the nonsense that has been purveyed to him so brilliantly for thousands of years. Once the universe opens its doors, we shall attain a better future.

I base the reasons for my skepticism about the interpretation of our remote past on the knowledge that is available today. If I admit to being a skeptic, I mean the word in the sense in which Thomas Mann used it in a lecture in the twenties: "The positive thing about the skeptic is that he considers everything possible!"

9

The Mysteries of South America and Other Oddities

ALTHOUGH I emphasized that it is not my intention to call in question the history of mankind during the last 2,000 years, I believe that the Greek and Roman gods and also most of the figures in sagas and legends are surrounded by the breath of a very remote past. Since mankind has existed, age-old traditions have lived on among the various peoples. More recent cultures, too, provide us with indications pointing to the remote, unknown past.

Ruins in the jungles of Guatemala and Yucatán can bear comparison with the colossal edifices of Egypt. The ground area of the pyramid of Cholula, 60 miles south of the Mexican capital, is bigger than that of the pyramid of Cheops. The pyramid field of Teotihuacán, 25 miles north of Mexico City, covers an area of almost 8 square miles, and all the edifices are aligned according to the stars. The oldest text about Teotihuacán tells us that the gods assembled here and took council about man, even before *homo sapiens* existed!

The calendar of the Mayas, the most accurate in the world, has already been mentioned, and so has the Venusian formula. Today it is proved that all the edifices at Chichén Itzá, Tikal, Copán, and Palenque were built according to the fab-

ulous Mayan calendar. The Mayas did not build pyramids because they needed them; they did not build temples because they needed them; they built temples and pyramids because the calendar decreed that a fixed number of steps of a building had to be completed every 52 years. Every stone has its relation to the calendar; every completed building conforms exactly to certain astronomical requirements.

But an absolutely incredible thing happened about A.D. 600! Suddenly, and for no apparent reason, a whole people left its laboriously and solidly built cities, with their rich temples, artistic pyramids, squares lined with statues, and grandiose stadiums. The jungle ate its way through buildings and streets, broke up the masonry, and turned everything into a vast landscape of ruins. No inhabitant ever returned there.

Let us pretend that this event, this enormous national migration, happened in ancient Egypt. For generations the people built temples, pyramids, cities, water conduits, and streets according to calendar dates; wonderful sculptures were laboriously carved out of stone with primitive tools and installed in the magnificent buildings; when this work, lasting more than a millennium, was finished, they left their homes and moved to the barren north. Such a procedure, brought a little closer to the course of historical events that we are familiar with, seems incredible because it is ridiculous. The more incomprehensible a procedure, the more numerous the vague explanations and attempts at interpretation. The first version put forward was that the Mayas might have been driven out by foreign invaders. But who could have overcome the Mayas, who were at the peak of their civilization and culture? No traces that could be connected with a military confrontation have ever been found. The idea that the migration could have been caused by a marked change in climate is well worth considering. But there are no signs to support this view either. The distance covered by the

Mayas from the territory of the old to the borders of the new kingdom measures only 220 miles as the crow flies—a distance that would have been inadequate to escape a catastrophical change in climate. The explanation that a devastating epidemic set the Mayas on the move also deserves serious examination. Apart from the fact that this explanation is offered as one of many, there is not the slightest proof of it. Was there a battle between the generations? Did the young revolt against the old? Was there a civil war, a revolution? If we opt for one of these possibilities, it is obvious that only a part of the population, namely the defeated, would have left the country and that the victors would have remained in their old settlements. Investigations of archaeological sites have not produced one proof that even a single Maya remained behind. The whole people suddenly emigrated, leaving their holy places unguarded in the jungle.

I should like to introduce a new note into the concert of opinions, a theory that is not proved any more than the other interpretations are. But regardless of the probability of the other explanations, I venture to make my contribution boldly and with conviction.

At some point in a very early period the Mayas' ancestors were paid a visit by the "gods" (in whom I suspect space travelers). As a number of factors support the assumption, the ancestors of the American cultural peoples may perhaps have immigrated from the ancient Orient. But in the world of the Mayas there were strictly guarded sacred traditions about astronomy, mathematics, and the calendar! The priests guarded the traditional knowledge because the "gods" had given their word to return one day. They created a grandiose new religion, the religion of Kukulkán, the Feathered Serpent.

According to priestly tradition, the gods would come back from heaven when the vast buildings were completed according to the laws of the calendar cycle. So the people has-

tened to complete temples and pyramids according to this holy rhythm, because the year of completion was supposed to be a year of rejoicing. Then the god Kukulkán would come from the stars, take possession of the buildings, and from then on live among mankind.

The work was finished, the year of the god's return came around—but nothing happened. The people sang, prayed, and waited for a whole year. Slaves and jewelry, corn and oil, were offered up in vain. But heaven remained dumb and without a sign. No heavenly chariot appeared; they could hear no rushing or distant thunder. Nothing, absolutely nothing, happened.

If we give this hypothesis a chance, the disappointment of priests and people must have been tremendous. The work of centuries had been done in vain. Doubts arose. Was there a mistake in the calculation of the calendar? Had the gods landed somewhere else? Had they all made a terrible mistake?

I should mention that the mystical year of the Mayas, in which the calendar began, goes back to 3111 B.C. Proofs of this exist in Mayan writings. If we accept this date as proved, then there was only a gap of a few hundred years between it and the beginning of the Egyptian culture. This legendary age seems to be genuine, because the hyperaccurate Mayan calendar says so over and over again. If that is so, the calendar and the national migration are not the only things that make me skeptical. For a comparatively new find starts off nagging doubts, too.

In 1935 a stone relief that very probably represents the god Kukumatz (in Yucatán, Kukulkán) was found in Palenque (Old Kingdom). A genuinely unprejudiced look at this picture would make even the most die-hard skeptic stop and think.

There sits a human being, with the upper part of his body bent forward like a racing motorcyclist; today any child

would identify his vehicle as a rocket. It is pointed at the front, then changes to strangely grooved indentations like inlet ports, widens out, and terminates at the tail in a darting flame. The crouching being himself is manipulating a number of indefinable controls and has the heel of his left foot on a kind of pedal. His clothing is appropriate: short trousers with a broad belt, a jacket with a modern Japanese opening at the neck, and closely fitting bands at arms and legs. With our knowledge of similar pictures, we should be surprised if the complicated headgear were missing. And there it is with the usual indentations and tubes, and something like antennae on top. Our space traveler—he is clearly depicted as one—is not only bent forward tensely; he is also looking intently at an apparatus hanging in front of his face. The astronaut's front seat is separated by struts from the rear portion of the vehicle, in which symmetrically arranged boxes, circles, points, and spirals can be seen.

What does this relief have to tell us? Nothing? Is everything that anyone links up with space travel a stupid figment of the imagination?

If the stone relief from Palenque is also rejected from the chain of proofs, one must doubt the integrity which scholars bring to the investigation of outstanding finds. After all, one is not seeing ghosts when one is analyzing actual objects.

To continue with our series of hitherto unanswered questions: Why did the Mayas build their oldest cities in the jungle, and not on a river, or by the sea? Tikal, for example, lies 109 miles as the crow flies from the Gulf of Honduras, 161 miles northwest of the Bay of Campeche, and 236 miles as the crow flies north of the Pacific Ocean. The fact that the Mayas were quite familiar with the sea is shown by the wealth of objects made of coral, mussels, and shellfish. Why, then, the "flight" into the jungle? Why did they build water reservoirs when they could have settled by the water? In Tikal alone there are 13 reservoirs with a capacity of 214,504 cubic yards.

Why did they absolutely have to live, build, and work here and not in some more "logically" situated place?

After their long trek the disappointed Mayas founded a new kingdom in the north. And once again cities, temples, and pyramids arose according to the dates prefixed by the calendar.

To give some idea of the accuracy of the Mayan calendar, here are the periods of time they used:

20 kins	= 1 uinal or 20 days
18 uinals	= 1 tun or 360 days
20 tuns	= 1 katun or 7,200 days
20 katuns	= 1 baktun or 144,000 days
20 baktuns	= 1 pictun or 2_1,880,000 days
20 picturs	= 1 calabtun or 56_1,600,000 days
20 calabtuns	= 1 kinchiltun or 1_2,152_1,000,000 days
20 kinchiltuns	= 1 atautun or 23_2,040_1,000,000 days

But the stone steps based on calendar dates are not the only things that tower above the green roof of the jungle, for observatories were built, too.

The observatory at Chichén is the first and oldest round building of the Mayas. Even today the restored building looks like an observatory. The circular edifice rises far above the jungle on three terraces; inside it a spiral staircase leads to the uppermost observation post; in the dome there are hatches and openings directed at the stars and giving an impressive picture of the firmament at night. The outer walls bear masks of the rain god . . . and the image of a human figure with wings.

Admittedly, the Mayas' interest in astronomy is not sufficient motivation for our hypothesis of relations with intelligences on other planets. The abundance of hitherto unanswered questions is bewildering: How did the Mayas know about Uranus and Neptune? Why are the observation posts in the observatory at Chichén not directed at the brightest

stars? What does the stone relief of the rocket-driving god at Palenque mean? What is the point of the Mayan calendar with its calculations for 400,000,000 years? Where did they get the knowledge required to calculate the solar and Venusian years to four decimal places? Who transmitted their inconceivable astronomical knowledge? Is every fact a chance product of the Mayan intellect or does each fact, or rather do all the facts added together, conceal a revolutionary message for a very distant future, as seen from their point in time?

If we put all the facts in a sieve and roughly separate the wheat from the chaff, there are so many inconsistencies and absurdities left that research needs spurring on to make a large-scale new effort to solve at least some of the enormous number of problems. For in our age research should no longer remain satisfied when confronted with so-called "impossibilities."

I have one more, rather gruesome story to tell, the story of the sacred well of Chichén Itzá. From the stinking mud of this well Edward Herbert Thompson excavated not only jewelry and objects of art but also the skeletons of youths. Drawing on ancient accounts, Diego de Landa stated that in times of drought the priests used to make pilgrimages to the well to appease the wrath of the rain god by throwing boys and girls into it during a solemn ceremony.

Thompson's finds proved De Landa's claim. A horrifying story, which also brings up more questions from the bottom of the well. How did this water hole come into being? Why was it declared a sacred well? Why this well in particular, for there are several like it?

The exact counterpart of the sacred well of Chichén Itzá exists, hidden in the jungle, barely 76 yards from the Mayan observatory. Guarded by snakes, poisonous millipedes, and troublesome insects, the hole has the same measurements as the "real" well; its vertical walls are equally weathered, overgrown, and swamped by the jungle. These two wells re-

semble each other most strikingly. The water is the same depth and the color shimmers from green to brown and blood-red in both wells. Unquestionably the two wells are the same age, and possibly they both owe their existence to the impact of meteorites. Meanwhile, contemporary scholars speak only of the sacred well of Chichén Itzá; the second well, which is so similar, does not fit into their theories, although both wells are 984 yards away from the top of the biggest pyramid, the Castillo. This pyramid belongs to the god Kukulkán, the Feathered Serpent.

The snake is a symbol of nearly all Mayan buildings. That is astonishing, for one would have expected a people surrounded by luxuriant rampant flora to leave flower motifs behind on their stone reliefs as well. Yet the loathsome snake confronts us everywhere. From time immemorial the snake has wound its way through the dust and dirt of the earth. Why should anyone conceive of endowing it with the ability to fly? Primeval image of evil, the snake is condemned to crawl. How could anyone worship this repulsive creature as a god, and why could it fly as well? Among the Mayas it could. The god Kukulkán (Kukumatz) presumably corresponds to the figure of the later god Quetzalcoatl. What does the Mayan legend tell us about this Quetzalcoatl?

He came from an unknown country of the rising sun in a white robe, and he wore a beard. He taught the people all the sciences, arts, and customs, and left very wise laws. It was said that under his direction corncobs grew as big as a man and that cotton grew already colored. When Quetzalcoatl had fulfilled his mission, he returned to the sea, preaching his teaching en route, and boarded a ship there which took him to the morning star. It is almost embarrassing for me to mention in addition that the bearded Quetzalcoatl also promised to return.

Naturally there is no lack of explanations for the appearance of the wise old man. A kind of messianic role is attrib-

uted to him, for a man with a beard is not an everyday occurrence in these latitudes. There is even a daring version which suggests that the old Quetzalcoatl was an earlier Jesus! That does not convince me. Anyone who arrived among the Mayas from the ancient world would have known about the wheel for transporting men and objects. Surely one of the first actions of a sage, a god like Quetzalcoatl, who appeared as missionary, lawgiver, doctor, and adviser on many practical aspects of life, would have been to instruct the poor Mayas in the use of the wheel and the cart. In fact the Mayas never used either.

Let us complete the intellectual confusion with a compendium of oddities from the dim past.

In 1900 Greek sponge divers found an old wreck loaded with marble and bronze statues off Antikythera. These art treasures were rescued, and subsequent investigations showed that the ship must have foundered around the time of Christ. When all the plunder was sorted out, it included a shapeless lump that proved more important than all the statues put together. When it had been carefully treated, scholars discovered a sheet of bronze with circles, inscriptions, and cog wheels and soon realized that the inscriptions must be connected with astronomy. When the many separate parts were cleaned, a strange construction came to light, a regular machine with movable pointers, complicated scales or dials and metal plates with writing. The reconstructed machine had more than twenty little wheels, a kind of differential gear, and a crown wheel. On one side was a spindle that set all the dials in motion at varying speeds as soon as it was turned. The pointers were protected by bronze covers on which long inscriptions could be read. In the case of this "machine from Antikythera," is there the slightest doubt that first-class precision mechanics were at work in antiquity? Moreover, the machine is so complicated that it was probably not the first of its kind. Professor Solla Price interpreted the

apparatus as a kind of calculating machine with the help of which the movements of the moon, the sun, and probably other planets could be worked out.

The fact that the machine gives the year of its construction as 82 B.C. is not so important. It would be more interesting to find out who built the first model of this machine, this small-scale planetarium!

The Hohenstaufen Emperor Frederick II is supposed to have brought back a most unusual tent from the east when he returned from the Fifth Crusade in 1229. In the interior of the tent stood a clockwork motor, and people watched the constellations in motion through the dome-shaped roof of the tent. Once again, a planetarium in olden times. We accept its existence at that date because we know that the necessary mechanical skills existed then. The idea of the earlier planetarium irritates us because in Christ's day the concept of a heaven with fixed stars taking into account the rotation of the earth did not exist. Even the knowledgeable Chinese and Arabic astronomers of antiquity can give us no help regarding this inexplicable fact, and it is undeniable that Galileo Galilei was not born until 1,500 years later. Anyone who goes to Athens should not miss the "machine from Antikythera"; it is on view in the National Archaeological Museum. We possess only written accounts of Frederick II's tent planetarium.

Here are some more strange things that antiquity has bequeathed to us:

Outline drawings of animals which simply did not exist in South America 10,000 years ago, namely camels and lions, were found on the rocks of the desert plateau of Marcahuasi 12,500 feet above sea level.

In Turkestan engineers found semicircular structures made of a kind of glass or pottery. Their origin and significance cannot be explained by the archaeologists.

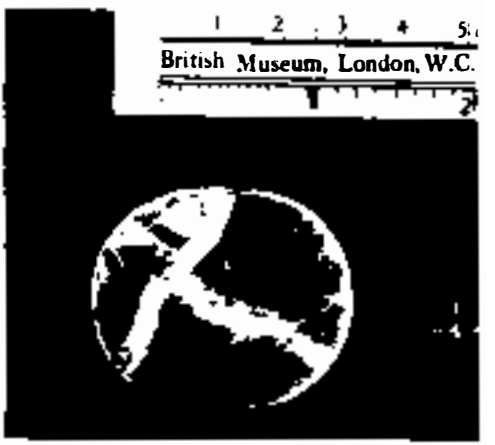
The ruins of an ancient town which must have been de-

Above: The ancient Mayan Temple of the Inscriptions at Palenque, Mexico.

Left: Inside on the wall of one of the small chambers is this relief engraving. There is not enough space to take a full front-view photograph, but there is enough detail to check the artist's drawing reproduced on the next page.

Three curious things from Assyria and one from Iraq. The top tablet shows the god Shamasi. It is from the third millennium B.C. and shows stars and figures with peculiar headgear. Why should ancient gods be associated with the stars?

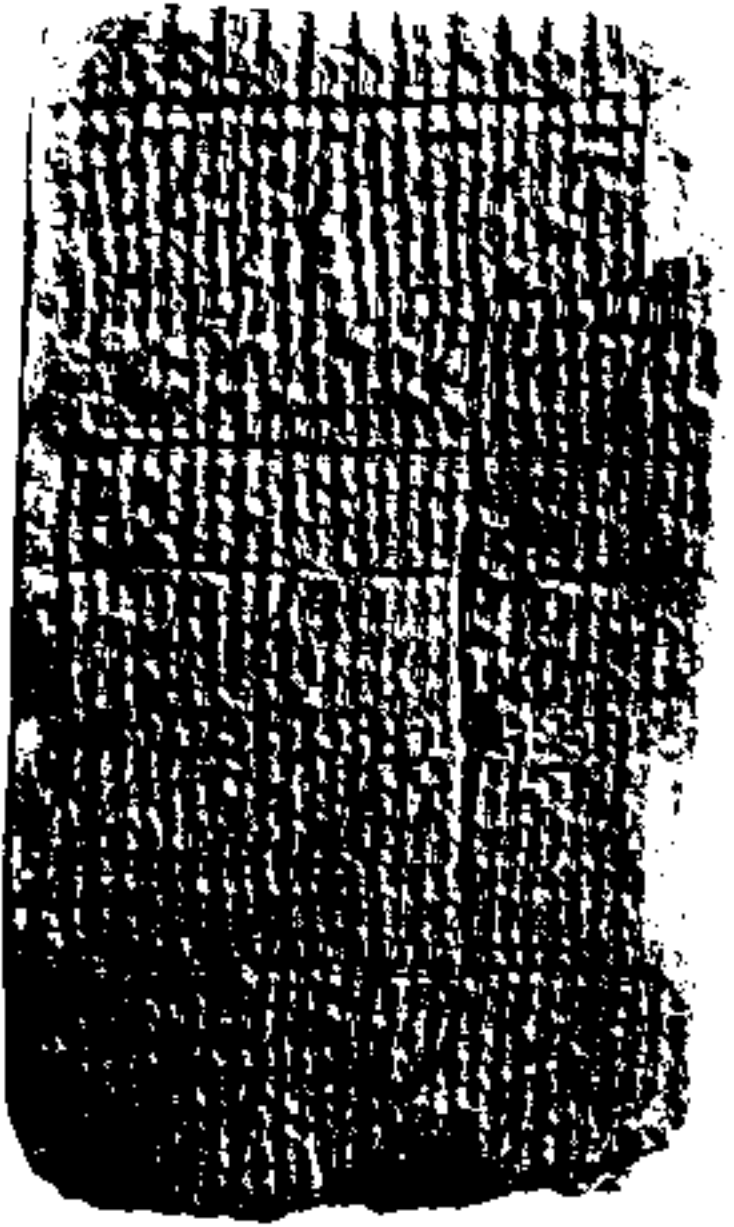
The second tablet is from the early first millennium B.C. The object in the center is described as a sacred tree. It could just as reasonably be interpreted as a symbolic representation of the construction of an atom, with an astronaut in a fiery chariot above. We have a figure within a winged circle and below the circle a representation of a propulsion unit.



An Assyrian crystal lens from the seventh century B.C. To grind such a lens requires a highly sophisticated mathematical formula. Where did the Assyrians get such knowledge? Finally, these very ancient fragments, now in the Baghdad Museum, have been identified as the remains of an electric battery.

This temple at Copán in Honduras is constructed according to the Mayan calendar with a fixed number of steps completed every 52 years.

This ancient iron pillar does not rust. It cannot be accurately dated, but it is hundreds of years old.



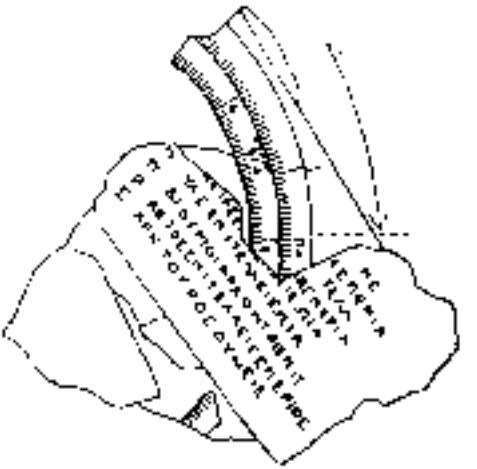
This Babylonian tablet records past and future eclipses.

Rock drawings from all around the world. *Above left,* from Rhodesia. This reclining figure is clad in chain mail and wears curious headgear. It might be the burial of a king. It might just as likely be an astronaut receiving supplies. *Above right*: Drawing from South Africa showing a white figure dressed in a short-sleeved suit with breeches, garters, gloves, and slippers. A rather surprising example of imagination on the part of primitive natives who went about naked. *Below left*: Drawing found by a Russian expedition. *Below right*: Drawing from Val Camonica in Northern Italy shows yet again the extraordinary obsession primitive man had with figures in suits and unusual headgear.

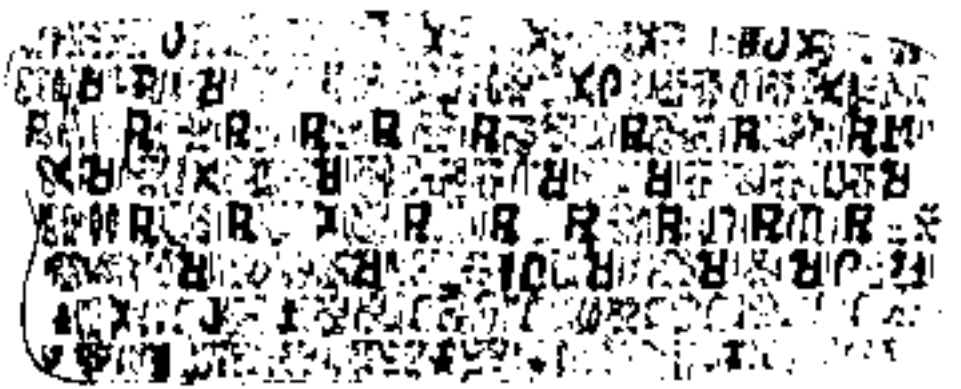
Above: A mummy from the Second Dynasty. *Below*: Part of a very finely woven piece of cloth. Where did the Egyptians get such complex techniques so early?

Above: With wood rollers and manpower it would have taken at least 600 years to handle the 2,500,000 stone blocks in the great pyramid of Cheops.

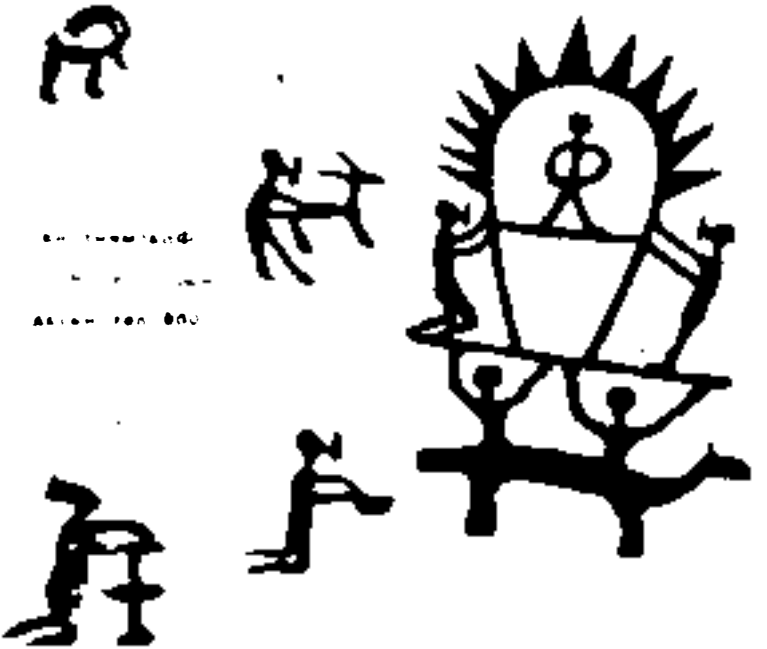
Below: As in Peru, we are faced with fantastically accurate jointing of huge blocks of stone.



Above left: After centuries under the sea this object does not look very important. It was found by Greek divers off Antikythera in 1900. *Above right*: Long and patient cleaning revealed that it was a mass of interlocking cogs and was a planetarium. The machine gives the year of construction as 82 B.C. This drawing reconstructs part of the machine.



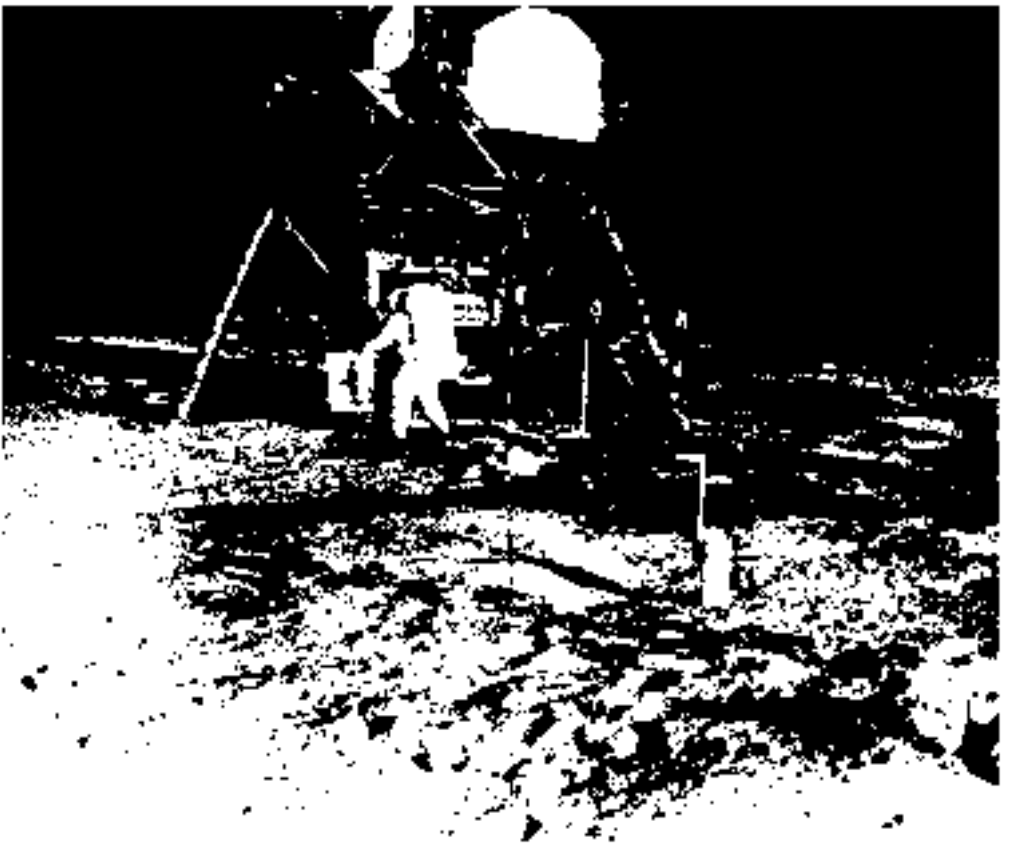
Easter Island is known as the "navel of the world" by the islanders. The huge statues on this tiny fragment of rock are extraordinary. Even more extraordinary is the fact that this totally isolated island had its own script, which is still undeciphered.



More ancient drawings. *Above*, from Navoy, and *below*, from Fergana in Uzbekistan.

An American astronaut. Perhaps the earliest space travelers also wore suits like this.

Ancient drawing from Tassili in the Sahara.



On July 21, 1969, a London bookmaker paid out £ 10,000. Only five years earlier he gave odds of a thousand to one that man would not land on the moon before 1970. Two weeks after the moon shot, the Americans released photographs taken 2,000 miles away from Mars. Space travel had moved out of the realm of science fiction.

stroyed by a great catastrophe exist in Death Valley, in the Nevada Desert. Even today traces of melted rocks and sand can be seen. The heat of a volcanic eruption would not have been enough to melt rocks—besides, the heat would have scorched the buildings first. Today only laser beams produce the required temperature. Strangely enough, not a blade of grass grows in this district.

Hadjar el Guble, the Stone of the South, in the Lebanon weighs more than 2,000,000 pounds. It is a dressed stone, but human hands could certainly not have moved it.

There are artificially produced markings, as yet unexplained, on extremely inaccessible rock faces in Australia, Peru, and Upper Italy.

Texts on gold plaques, which were found at Ur in Chaldea, tell of "gods" resembling men who came from the sky and presented the plaques to the priests.

In Australia, France, India, the Lebanon, South Africa, and Chile there are strange black "stones" which are rich in aluminum and beryllium. The most recent investigations showed that these stones must have been exposed to a heavy radioactive bombardment and high temperatures in the very remote past.

Sumerian cuneiform tablets show fixed stars with planets.

In Russia archaeologists discovered a relief of an airship, consisting of ten balls arranged in a row next to one another which stand in a right-angled frame supported on both sides by thick columns. Balls rest on the columns. Among other Russian finds there is a small bronze statue of a humanoid being in a bulky suit which is hermetically closed at the neck by a helmet. Shoes and gloves are equally tightly attached to the suit.

In the British Museum the visitor can read the past and future eclipses of the moon on a Babylonian tablet.

Engravings of cylindrical rocketlike machines, which are shown climbing skyward, were discovered in Kunming, the

capital of the Chinese province of Yunnan. The engravings were on a pyramid which suddenly emerged from the floor of Lake Kunming during an earthquake.

How is anyone going to explain these and many other puzzles to us? When people try to dismiss the old traditions wholesale as false, erroneous, meaningless, and irrelevant, they are merely dodging the issue. It is equally unreasonable, when all is said and done, to lump all traditions together as inaccurate and then make use of them when it happens to suit one's purpose. I think that there is something cowardly about stopping one's eyes and ears to facts—or even hypotheses—simply because new conclusions might win men away from a pattern of thought that has become familiar.

Revelations take place hourly and daily all over the world. Our modern means of communication and transport spread discoveries all around the globe. Scholars of all disciplines should inquire into reports from the past with the same creative enthusiasm that they bring to contemporary research. The adventure of the discovery of our past has finished its first phase. Now the second fascinating adventure in human history begins with man's moving into the cosmos.

10

The Earth's Experience of Space

THE question whether space travel has any point has not yet been silenced in discussion. The partial or total meaninglessness of space research is supposed to be proved by the banal assertion that people should not poke around in the universe as long as there are still so many unsolved problems on earth.

As I am anxious not to enter into the realm of scientific argument unintelligible to the layman, I shall only give a few obvious and valid reasons for the absolute necessity of space research.

From time immemorial, curiosity and the thirst for knowledge have always been the driving force for continuing research on the part of man. The two questions, WHY did something happen? and HOW did it happen? have always been the spur to development and progress. We owe our present-day standard of living to the permanent unrest that they created. Comfortable modern means of transport have removed the hardships of journeys which our grandfathers still had to suffer; many of the rigors of manual labor have

been noticeably alleviated by machines; new sources of energy, chemical preparations, refrigerators, various household appliances, etc., have completely liberated us from many activities that formerly could be done only by human hands. The creations of science have become not the curse but the blessing of mankind. Even its most terrifying offspring, the atom bomb, will turn out to be for the benefit of mankind.

Today science reaches many of its goals with seven-league boots. It took 112 years for photography to develop to the stage of a clear picture. The telephone was ready for use in 56 years, and only 35 years of scientific research were needed to develop radio to the point of perfect reception. But the perfecting of radar took only 15 years. The stages of epoch-making discoveries and developments are getting shorter and shorter; black-and-white television was on view after 12 years' research, and the construction of the first atom bomb took a mere 6 years. These are a few examples from 50 years of technical progress—magnificent and even a little frightening. Development will continue to reach its targets faster and faster. The next hundred years will realize the majority of mankind's eternal dreams.

The human spirit has made its way in the face of opposition and warnings. In the face of the archaic writing on the wall saying that water was the fishes' element and air the birds' element, man has conquered the regions which were not apparently intended for him. Man flies, against all the so-called laws of nature, and he lives under water for months in nuclear-powered submarines. Using his intelligence, he has made himself wings and gills which his creator had not intended for him.

When Charles Lindbergh began his legendary flight, his goal was Paris; obviously he was not really concerned with getting to Paris; he wanted to demonstrate that man could fly the Atlantic alone and unharmed. The first goal of space travel was the moon. But what this new scientific-cum-

technical project really wants to prove is that man can also master space.

So why space travel?

In only a few centuries our globe will be hopelessly and irremediably overpopulated. Statistics already calculate a world population of 8.7 billion for the year 2050. Barely 200 years later it will be 50 billion, and then 335 men will have to live on one square kilometer. It doesn't bear thinking about! The tranquilizerlike theories of food from the sea or even cities on the floor of the sea will prove inefficient remedies against the population explosion sooner than their optimistic supporters would like to think. In the first six months of 1966 more than 10,000 people, who had tried in desperation to keep themselves alive by eating snails and plants, starved to death on the Indonesian island of Lombok. U Thant, Secretary General of the United Nations, estimates the number of children in danger of dying of hunger in India at 20,000,000, a figure which backs up Dr. Hermann Mohler of Zurich's claim that hunger is reaching for world domination.

It has been proved that world food production does not keep pace with the growth of population, in spite of the most modern technical aids and the large-scale use of chemical fertilizers. Thanks to chemistry, the present age also has birth control products at its disposal. But what use are they if the women in underdeveloped countries do not use them? For food production could draw level with the population increase only if it were possible to halve the birth rate in ten years, *i.e.*, by 1980. Unfortunately I cannot believe in this rational solution, because the "sound barrier" of prejudice, ostensibly due to ethical motives and religious laws, cannot be broken through as quickly as the calamity of overpopulation grows. Is it more human or even divine to let millions of people die of hunger year after year than to save the poor creatures from being born?

Yet even if birth control were to win through one fine day, even if cultivatable areas were enlarged and harvests multiplied by aids as yet unknown, even if fishing supplied much more food and fields of algae on the ocean bed provided nourishment, if all this and a lot more were to happen, it would all be only a postponement, a putting off of the evil day for about 100 years.

I am convinced that one day men will settle on Mars and cope with the climatic conditions just as the Eskimos would do if they were transplanted to Egypt. Planets, reached by gigantic spaceships, will be populated by our children's children; they will colonize new worlds, just as America and Australia were colonized in the comparatively recent past. That is why we must press on with space research.

We must bequeath our grandchildren a chance to survive. Every generation which neglects this duty is condemning the whole of mankind to death by starvation some time in the future.

It is no longer a question of abstract research which is of interest only to the scientist. And let me impress on anyone who does not feel that he is responsible for the future that the results of space research have already protected us from a third world war. Has not the threat of total annihilation prevented the great powers from settling opinions, challenges, and conflicts with a major war? It is not necessary now for a Russian soldier to set foot on American soil in order to transform the United States into a desert, and no American soldier need ever die in Russia, because an atom bomb attack makes a country uninhabitable and barren owing to radioactivity. It may sound absurd, but the first intercontinental missiles guaranteed us comparative peace.

The view is occasionally put forward that the billions invested in space research would be better spent on assisting development. This view is wrong; the industrial nations do not give aid to underdeveloped countries purely on charitable

or political grounds; they also give it, understandably enough, to open up new markets for their own industries. The aid that the underdeveloped countries require is irrelevant from a long-term point of view.

Approximately 1.6 billion rats, each of which destroyed about 10 pounds of food a year, were living in India in 1966. Yet the state does not dare exterminate this plague, because the devout Indian protects rats. India also has a population of 80,000,000 cows, which give no milk, cannot be harnessed as draft animals, and cannot be slaughtered. In a backward country whose development is hindered by so many religious taboos and laws, it will take many generations to sweep away all the life-endangering rites, customs, and superstitions.

Here, too, the means of communication of the age of space travel—newspapers, radio, television—serve progress and enlightenment. The world has become smaller. We know and learn more about one another. But to arrive at the ultimate insight that national frontiers are a thing of the past, space travel was needed. The resulting increase in technology will spread the realization that the insignificance of peoples and continents in the dimensions of the universe can only be a stimulus and incentive to cooperative work on space research. In every epoch mankind has needed an inspiriting watchword that enabled it to rise beyond the obvious problems to the apparently unattainable reality.

A quite considerable factor which provides an important argument for space research in the industrial age is the appearance of new branches of industry, in which hundreds of thousands of people who lost their jobs through automation now earn their living. The space industry has already outstripped the automobile and steel industries as a pacesetter in the market. More than 4,000 new articles owe their existence to space research; they are virtually by-products of research for a higher goal. These by-products have become an accepted part of everyday life without anyone giving a

thought about their origin. Electronic calculating machines, mini-transmitters and mini-receivers, transistors in radio and television sets, were discovered on the periphery of research, and so were the frying pans in which food does not stick. Precision instruments in all aircraft, fully automatic ground control systems and automatic pilots, and the rapidly developed computer are parts of the space research that has so many persecutors, parts of a development program, that also have an effect on the private lives of individuals. The things of which the layman has no idea are legion: new welding and lubricating processes in an absolute vacuum, photoelectric cells and new tiny sources of energy conquering infinite distances.

Out of the flood of taxes which is poured into space research, the returns on the vast investment flow back to the taxpayer in a steady stream. Nations that do not participate in space research in any way will be overwhelmed by the technical revolution. Names and concepts such as Telstar, Echo, Relay, Trios, Mariner, Ranger, and Syncom are signposts on the road of irresistible research.

Since terrestrial supplies of energy are not inexhaustible, the space travel program will also become vital one day, because we shall have to obtain fissionable matter from Mars or some other planet in order to be able to illuminate our cities and heat our houses. As atomic power stations provide the cheapest form of energy already today, industrial mass production will be fully dependent on these stations only when the earth no longer yields fissionable matter. Fresh consequences of research overwhelm us daily. The leisurely transmission of acquired knowledge from father to son is over forever. A technician who repairs a radio set that works by simply pressing a button must know all about the technology of transistors and complicated circuits that are often printed on sheets of plastic. It will not be long before he also has to deal with the tiny new components of microelectronics. What the

apprentice is taught today, the journeyman will have to fill out with new knowledge. And even if the man who was master of his craft in the days of our grandfathers had knowledge to last his whole life, the master of the present and future will constantly have to keep on adding new skills to old. What was valid yesterday is obsolete tomorrow.

Even though it will take millions of years, our sun will burn out and die one day. It does not even need that terrible moment when a statesman loses his nerve and sets the atomic annihilation apparatus in motion to cause a catastrophe. An unascertainable and unpredictable cosmic event could bring about the earth's downfall. Man has never yet accepted the idea of such a possibility, and it may be for that reason that he devoutly sought the hope of an afterlife of the spirit and soul in one of the many thousand religions.

So I suggest that space research is not the product of his free choice but that he is following a strong inner compulsion when he examines the prospects of his future in the universe. Just as I proclaim the hypothesis that we received visits from space in the dim and distant past, I also assume that we are not the only intelligences in the cosmos—indeed I suspect that there are older, more advanced intelligences in the universe. If I now also assert that all the intelligences are carrying on space research on their own initiative, I am really moving into the world of science fiction for a moment, knowing full well that I am putting my head into a hornets' nest!

"Flying saucers" have been appearing on and off for at least twenty years; in the literature on the subject they are known as UFO's, unidentified flying objects. But before I deal with the exciting subject of the mysterious UFO's, I should just like to mention an important argument used when the justification for space travel is under discussion.

It is said that research into space travel is unprofitable; no country, however rich, can raise the enormous amounts of

money needed without risking national bankruptcy. True, research per se has never been profitable; it is the products of research that make the investment profitable. It is unreasonable to expect profitableness and the amortization of research into space travel at its present stage. No balance has been struck to show the return from the 4,000 by-products of space research. To me there is absolutely no doubt that it will give a return such as has seldom been given by any other kind of research. When it reaches its goal, not only will it be profitable, but it will also bring the salvation of mankind from downfall in the literal sense of the word. Incidentally, a whole series of COMSAT satellites are already sound commercial propositions.

In November, 1967, the German magazine *Der Stern* said:

> The majority of medical life-saving machines come from America. They are the product of the systematic evaluation of the results of atomic research, space travel, and military technology. And they are the product of a novel collaboration between industrial giants and hospitals in America, which is leading medicine to new triumphs almost daily.
>
> Thus the Lockheed Company which makes Starfighters and the famous Mayo Clinic cooperated to develop a new system of nursing based on computer techniques. The designers of North American Aviation, following suggestions by the medical profession, are working on an "emphysema belt," which is intended to make it easier for patients with lung trouble to breathe. NASA space authorities have produced the idea for a diagnostic apparatus. The apparatus, actually conceived to measure the impact of micro-meteorites on spaceships, registers minute muscular spasms in certain nervous diseases.
>
> Another life-saving by-product of American computer technology was the "heart-beat machine." Today more than 2,000 Germans live with one of these apparatuses in their chests. It is a battery-driven mini-generator which is introduced under the skin. From it the doctors insert a connecting cable through the superior vena cava to the right auricle of the heart. The

heart is then stimulated to rhythmical movements by regular surges of current. It beats. When the battery of the "heart machine" is burned out after three years, it can be changed by a comparatively simple operation.

General Electric improved this little miracle of medical technology last year when it developed a two-speed model. If the wearer of this appliance wants to play tennis or run to catch a train, he simply moves a bar magnet up and down for a moment over the spot where his built-in generator is located. His heart promptly works at a higher speed.

Two more examples of by-products of space research. Who still has the nerve to say that it is useless?

Under the headline "Stimulus from Moon Rockets," the newspaper *Die Zeit* contained the following report in November, 1967:

> The designs of space vehicles developed for soft landings on the moon have an interim interest for automobile manufacturers, for the knowledge of how such designs behave under conditions which cause their destruction can be appreciably increased. Even though it will not be possible to make cars safe for the passengers against all kinds of collisions, the designs used with most success in space travel can help to diminish the risk when collisions occur. "Honey-comb" sheets, which are being used more and more in modern aircraft construction, guarantee high tensile strength with little weight. They have also been practically tested in automobile manufacture. The floor of the experimental gas-turbine-driven Rover car is made of "honey-combs."

Anyone who knows the present state of research and the impetuous way in which it develops can no longer tolerate sayings such as, "It will never be possible to travel from one star to another." The younger generation of our day will see this "impossibility" become reality. Gigantic spaceships with incredibly powerful motors will be built, as the Russians

proved in 1967 when they succeeded in coupling two unmanned spacecraft in the stratosphere. One sector of space research is already working on a kind of protective screen, like an electric rainbow, which is attached in front of the actual capsule and is intended to prevent or deflect the impact of particles. A group of distinguished physicists is trying to detect what are known as tachyons, theoretical particles which are supposed to fly faster than light and whose lower speed limit is the speed of light. Scientists know that tachyons must exist; it is now "only" a matter of providing physical proof of their existence. Yet such proofs have actually been produced for neutrinos and antimatter! Finally I should like to ask the die-hard critics in the chorus of opponents of space travel: Do you really believe that several thousands of probably the cleverest men of our time would waste their impassioned work on a pure Utopia or a trivial goal?

So let me tackle UFO's boldly, ignoring the risk of not being taken seriously. If I am not taken seriously, I can at least console myself with the knowledge that I am in distinguished company.

UFO's have been sighted in America and over the Philippines, in West Germany and elsewhere. Let us assume that 98 percent of the people who claimed that they had seen UFO's actually saw ball lightning, weather balloons, strange cloud formations, new unknown types of aircraft, or even odd effects of light and shade in the sky at twilight. Undoubtedly, too, many people were the victims of mass hysteria. They claimed to have seen something that simply was not there. And of course there were also the publicity-seekers who wanted to make capital out of their alleged observations and produce banner headlines for the press in the silly season. If we reject all the crackpots, liars, hysterics, and sensationmongers, there still remains a sizable group of sober observers, including people whose jobs make them familiar with celestial phenomena. A simple housewife may have made the

same mistake as a farmer in the Wild West. But when, for example, a sighting of UFO's is made by an experienced airline pilot, it is hard to dismiss it as humbug. For an airline pilot is familiar with mirages, ball lightning, weather balloons, etc. The reactions of all his senses, including his first-class vision, are regularly tested; he is not allowed to drink alcohol for some hours before takeoff and during flights. And an airline pilot is hardly likely to talk nonsense, because he would lose his nice, well-paid job only too easily. Yet when not merely one airline pilot, but a whole group of pilots (including Air Force men), tell the same story, we are bound to listen to it.

I myself do not know what UFO's are; I do not say that they have been proved to be flying objects belonging to unknown intelligences, although there could be little objection to such a supposition. Unfortunately I have never seen a UFO with my own eyes during my worldwide travels, but I can reproduce here some credible, authenticated accounts:

On February 5, 1965, the U.S. Department of Defense announced that the Special Division for UFO's had been instructed to investigate the reports of two radar operators. On January 29, 1965, these two men had spotted two unidentified flying objects on their radar screen at the Naval Airfield in Maryland. These objects approached the airfield from the south at the enormous speed of 4,350 miles an hour. Thirty miles above the airfield the objects made a sharp turn and quickly disappeared out of radar range.

On May 3, 1964, various people at Canberra, Australia, including three meteorologists, observed a large shining flying object crossing the morning sky in a northeasterly direction. During an interrogation by delegates of NASA the eyewitnesses described how the "thing" had tumbled about in a strange way and how a smaller object had rushed at the large one. The small object had given off a red glow and then been

obliterated, while the large "thing" had disappeared from view in a northwesterly direction. One of the meteorologists said resignedly, "I've always ridiculed these UFO stories. What the hell am I going to say now?"

On November 23, 1953, an unidentified flying object was picked up on the radar screen of the Kinross Air Base in Michigan. Flight Lieutenant R. Wilson, who happened to be on a training flight in an F-86 jet aircraft, was given permission to chase the "thing." The radar crew watched Wilson pursuing the unidentified object for 160 miles. Suddenly both flying bodies merged with one another on the radar screen. Radio calls to Wilson were unanswered. During the next few days, the region in which the inexplicable event took place was combed for wreckage by search troops, and nearby Lake Superior was examined for traces of oil. They found nothing. There was absolutely no trace of Flight Lieutenant Wilson and his machine!

On September 13, 1965, shortly before one in the morning, Police Sergeant Eugene Bertrand came across a distracted woman at the wheel of her car in a bypass at Exeter, New Hampshire. The lady refused to drive on and claimed that a gigantic gleaming-red flying object had pursued her for ten miles to Route 101 and then disappeared into the forest.

The policeman, an elderly, level-headed man, thought the lady was a bit crazy, until he heard the same report from another patrol over his car radio. Speaking from headquarters, his colleague Gene Toland ordered him to return there at once. There a young man told him the same story as the lady; he too had sought refuge in the ditch from a glowing red object.

Rather unwillingly the men went on a car patrol, convinced that the whole silly story would have a rational explanation. They searched the district for two hours, then they set off on the return journey. They passed a field in which stood six horses that suddenly stampeded madly

out of it. Almost simultaneously the region was bathed in glowing red light. "There. Look there!" shouted a young policeman. Indeed, a fiery red object, which moved slowly and silently toward the observers, was floating above the trees. Bertrand excitedly informed his colleague Toland over the telephone that he had just seen the damned thing with his own eyes. Now the farm near the road and the neighboring hill were also bathed in glowing red light. A second police car screeched to a halt next to the men.

"God damn it!" stuttered Dave. "I heard you and Toland yelling to each other over the radio. I thought you'd gone crazy. But just look at that!"

Fifty-eight qualified eyewitnesses came forward during the investigation of the mysterious incident that was subsequently carried out. They included meteorologists and members of the Coast Guard—in other words, men who as reliable observers were scarcely likely not to be able to tell a weather balloon from a helicopter, or a falling satellite from the navigation lights of an aircraft. The report contained factual statements but did not give any explanation of the unidentified flying object.

On May 5, 1967, the mayor of Marliens in the Côte-d'Or, Monsieur Malliotte, discovered a strange hole in a field of clover 680 yards from the road. He found traces of a circle with a diameter of 15½ feet and a depth of 1 foot. Deep furrows 4 inches deep ran out in all directions from this circle. They gave the impression that a heavy metal grating had been pressed into the ground. At the end of the furrows were holes 1 foot 2 inches deep, which might have been impressed in the soil by "feet" at the end of the metal grating. An exceptionally curious feature was the violet-white dust which was deposited in the furrows and holes. I have inspected this place near Marliens personally. Ghosts could not have left those traces!

What are we to make of this account? It is depressing what

many people—and sometimes whole occult societies—make out of their ostensible observations. They only blur our view of reality and deter serious scholars from dealing with verified phenomena because they are afraid of exposing themselves to ridicule.

On November 6, 1967, during a transmission by German television on the subject "Invasion from the Cosmos?" the captain of a Lufthansa aircraft told of an incident of which he and four members of the crew were eyewitnesses. On February 15, 1967, about ten to fifteen minutes before landing in San Francisco, they saw close to their own machine a flying object with a diameter of about 33 feet that shone dazzlingly and flew alongside them for some time. They sent their observations to the University of Colorado, which for want of a better explanation surmised that the flying object was part of a previously launched rocket falling to the ground. The pilot explained that with more than a million miles of flying experience he was as unable as his colleagues to believe that a falling piece of metal could stay in the air for a quarter of an hour, have such dimensions, and fly alongside an aircraft; he believed this explanation even less since this unidentified flying object had been observable from the ground for nearly three-quarters of an hour. The German pilot certainly did not give the impression of being a visionary.

Two reports from *Die Suddeutsche Zeitung*, Munich, November 21 and 23, 1967:

> *Belgrade* (*From our own correspondent*): Unidentified flying objects (UFO's) have been sighted over various districts of southeast Europe during the last few days. At the weekend an amateur astronomer photographed three of these gleaming celestial objects at Agram. But while the experts were still giving their opinions of this photograph that was splashed across several columns of the Yugoslavian papers, more UFO's have already been reported from the mountainous region of

Montenegro, where they were even supposed to have caused several forest fires. These accounts come mainly from the village of Ivangrad where the inhabitants swear black and blue that they have observed strange brightly illuminated heavenly bodies every evening during the last few days. The authorities confirm that several forest fires have occurred in this district, but so far cannot explain what started them.

Sofia (UPI): A UFO has appeared over the Bulgarian capital of Sofia. According to the report of the Bulgarian News Agency BTA, the UFO could be recognized with the naked eye. BTA says that the flying body was "bigger than the sun's disc and later took the shape of a trapeze." The flying body is supposed to have emitted powerful rays. It was also observed by telescope in Sofia. A scientific collaborator of the Bulgarian Institute for Hydrology and Meteorology said that the flying body apparently moved under its own power. It was flying about 18 miles above the earth.

People block the road to serious research by boundless stupidity. There are "contact men" who claim to be in communication with extraterrestrial beings; there are groups who develop fanciful religious ideas from hitherto unexplained phenomena or build cranky philosophies of life from them or even claim to have received orders for the salvation of mankind from UFO crews. Among the religious fanatics, the Egyptian "UFO angel" naturally comes from Mohammed, the Asiatic one from Buddha, and the Christian one directly from Jesus.

At the 7th International World Congress of UFO Investigators, in the autumn of 1967, Professor Hermann Oberth, the man known as "the father of space travel" and the teacher of Wernher von Braun, said that UFO's were still "an extra-scientific problem"; but, said Oberth, UFO's were probably "spaceships from unknown worlds," and to use his own words: "Obviously the beings who man and fly them are far ahead of us culturally, and if we go about things properly

we can learn a lot from them." Oberth, who accurately predicted rocket development on earth, suspects that the prerequisites for abiogenesis exist on other planets in the solar system. Oberth, a research scientist himself, demands that serious scientists, too, should tackle problems that may seem fantastic at first. "Scholars behave like stuffed geese who refuse to digest anything else. They simply reject new ideas as nonsense."

On November 17, 1967, under the headline "Second Thoughts," *Die Zeit* said:

> For years the Russians have ridiculed Western hysteria about flying saucers. Not long ago *Pravda* contained an official denial that such peculiar celestial vehicles existed. Now Air Force General Anatolyi Stolyakov has been appointed director of a committee which is to examine all reports of UFO's. In this connection the London *Times* writes: "Whether UFO's are the product of collective hallucinations, whether they originate from Venusian visitors or are to be understood as a divine revelation—there must be an explanation for them, otherwise the Russians would never have set up a Committee of Inquiry."

The most spectacular and puzzling incident connected with the phenomenon of "matter from the universe" took place at 7:17 on the morning of July 30, 1908, in the Siberian Taiga. A fireball shot across the sky and was lost in the steppe. Travelers on the Trans-Siberian Railway observed a glowering mass which moved from south to north. A thunderbolt shook the train, explosions followed, and most of the seismographic stations in the world registered an appreciable earth tremor. At Irkutsk, 550 miles from the epicenter, the needle of the seismograph went on quivering for nearly an hour. The noise could be heard over a radius of 621 miles. Whole herds of reindeer were destroyed. Nomads were whirled up into the air with their tents.

Not until 1921 did Professor Kulik begin to collect eyewitness accounts. Finally he also succeeded in collecting the money for a scientific expedition to this sparsely populated region of the Taiga.

When the expedition members reached the stony Tunguska in 1927, they were convinced that they would find the crater made by a gigantic meteorite. Their conviction turned out to be quite wrong. They saw the first trees without tops as much as 37 miles from the center of the explosion. The nearer they came to the critical point, the more barren the district became. Trees stood there like shaved telegraph poles; in the vicinity of the center even the strongest trees had been snapped off outward. Lastly they found traces of a tremendous conflagration. Pushing on farther north, the expedition became convinced that a vast explosion must have taken place. When they came across holes of all sizes in swampy ground they suspected the impact of meteorites; they dug and drilled in the marshy ground without finding a single remnant, a piece of iron, a bit of nickel, or a lump of stone. Two years later the search was continued with bigger drills and improved technical resources. They drilled to a depth of 118 feet without finding a single trace of any kind of meteoric material.

In 1961 and 1963 two more expeditions were sent to the Tunguska by the Soviet Academy of Sciences. The 1963 expedition was under the leadership of the geophysician Solotov. This group of scientists, now equipped with the most modern technical appliances, came to the conclusion that the explosion in the Siberian Tunguska must have been a nuclear one.

The type of an explosion can be determined when several physical orders of magnitude that caused it are known. One of these orders of magnitude in the Tunguska explosion was known in the vast amount of radiant energy emitted. In the Taiga the expedition found trees 11 miles from the center

of the explosion that had been exposed to radiation and set on fire by it at the moment of explosion. But a growing tree can catch fire only if the amount of radiant energy per square centimeter reaches 70 to 100 calories. Yet the flash of the explosion was so bright that it continued to cast secondary shadows at a distance of 124 miles from the epicenter!

From these measurements the scientists worked out that the radiant energy of the explosion must have been around 2.8×10^{23} ergs. (The erg in science is the so-called "measurement of work." A beetle weighing one gram performs 1 erg's worth of work when it climbs a wall 1 centimeter high.)

The expedition found branches and twigs on the tops of trees that had been carbonized, up to a range of eleven miles. From this they concluded that sudden heating had taken place. This was the result of an explosion, not a forest fire! These carbonizations were found only where there had been no shadows to interrupt the diffusion of the flash. Clearly and unquestionably it must have been a case of radiation. The sum of all these effects makes the force of 10^{23} ergs necessary for the gigantic devastation. This immense energy corresponds to the destructive power of an atom bomb weighing 10 megatons or

100,000,000,000,000,000,000,000 ergs!

The investigations confirmed a nuclear explosion and relegated to the realm of fable explanations such as the impact of a comet or the fall of a great meteorite.

What explanations are offered for this nuclear explosion in the year 1908?

In March, 1964, an article in the reputable Leningrad paper *Svesda* put forward the theory that intelligent beings living on a planet in the constellation Cygnus had tried to make contact with the earth. The authors, Genrich Altov and Valentina Shuraleva, said that the impact in the Siberian Taiga was a response to the colossal explosionlike eruption of the volcano of Krakatoa in the Indian Ocean, which sent

a large concentration of radio waves into the universe when it erupted in 1883. The distant stellar beings had erroneously taken the radio waves for a signal from space; so they had directed a laser beam, which was much too strong, at the earth, and when the beam hit the earth's atmosphere high above Siberia, it had turned into matter. I must admit that I do not accept this explanation because it seems too far-fetched.

I am equally unable to accept the theory that seeks to explain the incident by the impact of antimatter. Even though I believe that there is antimatter in the depths of the cosmos, there cannot be any left in the Tunguska, because the collision of matter and antimatter results in their mutual dissolution. Moreover, the possibility of a piece of antimatter reaching the earth without a collision with matter on its long journey is very remote.

I prefer to adhere to the opinion of those who suspect that the nuclear explosion was caused by an unknown spaceship's energy pile bursting. Fantastic? Of course, but does that mean that it must be impossible?

There are shelves and shelves of literature about the Tunguska meteorites. One further fact I want to emphasize: radioactivity around the center of the explosion in the Taiga is twice as high—even today—as elsewhere. Careful investigation of trees and their annual rings confirm an appreciable increase in radioactivity since 1908.

Until a single, exact, indubitable scientific proof of the phenomenon—and many others—is produced, no one has the right to discard an explanation within the bounds of credibility without giving his reasons.

Our knowledge of the planets in our solar system is rather comprehensive; Mars is the only planet on which "life" in our sense of the word might exist and then only in limited quantities. Man has set the theoretical boundary to the possibility of life in this sense; this boundary is called the

ecosphere. In our solar system only Venus, the Earth, and Mars lie within the limits of the ecosphere. Nevertheless, we should remember that the determination of the ecosphere is based on our conception of life and that unknown life is by no means necessarily bound to our premises for life. Until 1962 Venus was considered to be a possible home for life. Then Mariner II got within about 21,000 miles of Venus. According to the information it transmitted, Venus can now be ruled out as a supporter of life.

It emerged from Mariner II's reports that the average surface temperature on both light and dark sides was 420° C. Such a temperature means that there could be no water, only lakes of molten metal on the surface. The popular idea of Venus as the twin sister of the earth is over and done with, even though the carbureted hydrogen present could be a culture medium for all kinds of bacteria.

It is not long since scientists claimed that life on Mars is inconceivable. For some time now that has become "is *scarcely* conceivable." For after the successful reconnaissance mission by Mariner IV we must concede, even if reluctantly, that the possibility of life on Mars is not unlikely. It is also within the bounds of possibility that our neighbor Mars had its own civilization untold millennia ago. In any case the Martian moon Phobos deserves special attention.

Mars has two moons: Phobos and Deimos (in Greek, Fear and Terror). They were known long before the American astronomer Asaph Hall discovered them in 1877. As early as 1610 Johannes Kepler suspected that Mars was accompanied by two satellites. Although the Capucine monk Schyrl may have claimed to have seen the Martian moons a few years earlier, he must have been mistaken, for the tiny Martian moons could not possibly have been seen with the optical instruments of his day. A fascinating description of them is given by Jonathan Swift in *A Voyage to Laputa and Japan*, which forms Part III of *Gulliver's Travels*. Not only does he describe

the two Martian moons, but he also gives their size and orbits. This quotation comes from Chapter 3:

> [The Laputan astronomers] spend the greatest part of their lives in observing the celestial bodies, which they do by the assistance of glasses far excelling ours in goodness. For although their largest telescopes do not exceed three feet, they magnify much more than those of a hundred yards among us, and at the same time show the stars with greater clearness. This advantage hath enabled them to extend their discoveries much further than our astronomers in Europe for they have made a catalogue of ten thousand fixed stars, whereas the largest of ours do not contain above one third part of that number. They have likewise discovered two lesser stars, or satellites, which revolve about Mars, whereof the innermost is distant from the centre of the primary planet exactly three of the diameters, and the outermost five; the former revolves in the space of ten hours, and the latter in twenty one and an half; so that the squares of their periodical times are very near in the same proportion with the cubes of their distance from the centre of Mars, which evidently shows them to be governed by the same law of gravitation, that influences the other heavenly bodies.

How could Swift describe the Martian satellites when they were not discovered until 150 years later? Undoubtedly the Martian satellites were suspected by some astronomers before Swift, but suspicions are not nearly enough for such precise data. We do not know where Swift got his knowledge.

Actually these satellites are the smallest and strangest moons in our solar system. They rotate in almost circular orbits above the equator. If they reflect the same amount of light as our moon, then Phobos must have a diameter of 10 miles and Deimos one of only 5 miles. But if they are artificial moons and so reflect still more light, they would actually be even smaller. They are the only known moons in our solar system that move around their mother planet

faster than she herself rotates. In relation to the rotation of Mars, Phobos completes two orbits in one Martian day, whereas Deimos moves only a little faster around Mars than the planet itself rotates.

In 1862, when the earth was in a very favorable position in relation to Mars, people sought in vain for the Martian satellites—they were not discovered until fifteen years later! The theory of planetoids came up because several astronomers suspected that the Martian moons were fragments from space which Mars had attracted. But the theory of planetoids is untenable, for both the Martian moons revolve in almost the same planes above the equator. *One* fragment from space might do that by chance, but not two. Finally, measurable facts produced the modern satellite theory.

Russian scientist I. S. Shklovskii and renowned American astonomer Carl Sagan, in their book *Intelligent Life in the Universe,* published in 1966, accept that the moon Phobos is an artificial satellite. As the result of a series of measurements, Sagan came to the conclusion that Phobos must be hollow and a hollow moon cannot be natural.

In fact, the peculiarities of Phobos' orbit bear no relation to its apparent mass, whereas such orbits are typical in the case of hollow bodies. Shklovskii, director of the Department of Radio-Astronomy in the Moscow Sternberg Astrological Institute, made the same statement after he had observed that a peculiar unnatural acceleration could be confirmed in the movement of Phobos. This acceleration is identical with the phenomenon which has been established in the case of our own artificial satellites.

Today people take these fantastic theories of Sagan and Shklovskii very seriously. Further Martian probes are planned, also intended to take the bearings of the Martian moons. In the years ahead, the Russians intend to observe the movements of the Martian moons from several observatories.

If the view supported by reputable scientists East and West that Mars once had an advanced civilization is correct,

the question arises: Why does it no longer exist today? Did the intelligences on Mars have to seek a new environment? Did their home planet, which was losing more and more oxygen, force them to look for new territories to settle? Was a cosmic catastrophe responsible for the downfall of the civilization? Lastly, were some of the inhabitants of Mars able to escape to a neighboring planet?

In his book *Worlds in Collision,* published in 1950 and still much discussed in scientific circles, Immanuel Velikovsky declared that a giant comet had crashed into Mars and that Venus had been formed as a result of this collision. His theory can be proved if Venus has a high surface temperature, clouds containing carbureted hydrogen, and an anomalous rotation. Evaluation of the data provided by Mariner II confirms Velikovsky's theory. Venus is the only planet which rotates "backward," *i.e.*, the only planet that does not follow the rules of our solar system as do Mercury, the Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

But if a cosmically caused catastrophe is a possible reason for the destruction of a civilization on the planet Mars, that would also provide material for my theory that the earth may have received visits from space in the very remote past. The thesis that a group of Martian giants perhaps escaped to earth to found the new culture of *homo sapiens* by breeding with the semi-intelligent beings living there then becomes a speculative possibility. Since the gravity of Mars is not as strong as that of the earth, it can be assumed that the build of Martian men was heavier and bigger than that of the earth men. If there is anything in this argument, we could have the giants who came from the stars, who could move enormous blocks of stone, who instructed men in arts still unknown on earth, and who finally died out.

Never have we known so little about so much as today. I am certain that the theme Man and Unknown Intelligences will remain on the agenda of research until every puzzle that can be solved has found an answer.

II

The Search for Direct Communication

AT 4 o'clock one April morning in 1960, an experiment began in a lonely valley in West Virginia. The big 85-foot radio-telescope at Green Bank was trained on the star Tau Ceti, 11.8 light-years away. Young American astronomer Dr. Frank Drake, who enjoys considerable fame as a scientist, acted as leader of this project. He wanted to tune in to the radio transmissions of other civilizations in order to pick up signals from unknown intelligences in outer space. The first series of experiments lasted 150 hours. They passed into history as Project Ozma (after the princess of the mythical land of Oz), although it was a failure. The experiment was broken off, not because some of the participating scientists expressed the view that there were no radio transmissions in space, but rather because it was realized that at the time there was no apparatus sensitive enough to reach the desired goal. Ozma will not be the only experiment of its kind. Instruments have been erected on the moon, as of July, 1969, and more are to come in subsequent visits by astronauts. They

will be able to scan the immeasurable spaces between the stars for radio signals, free from terrestrial interference.

However, it must be asked whether the search for radio signals really helps our space research and whether it might not be more practical for us to do the sending of radio signals into space. Of course, we cannot expect unknown intelligences to understand Russian or Spanish or English and to be sitting there waiting to be contacted.

There remain three possibilities by which we can make ourselves known: mathematical symbols, laser beams, and pictures. The first of these seems most likely to succeed. In order to send such symbols we shall have to discover and fix intergalactic wavelengths that stand a good chance of being received throughout the cosmos. 1420 megaherz would provide such a frequency, for that is the radiation frequency of the neutral hydrogen that results from the collision of hydrogen atoms. Since hydrogen is an element, this radiation frequency could be known throughout the universe. Besides, 1420 megaherz lies outside the overcrowded scale of terrestrial wavelengths. The possibility of errors and interference factors would be reduced to a minimum. In this way radio impulses could be sent into space and if unknown intelligences exist they would recognize them.

In this connection a news item from *Die Zeit*, December 22, 1967, is most interesting in the light of the actual moon landing in July, 1969. Under the headline "The Moon Will Be Bombarded by Flashes," we read:

> The distance of the moon from the earth is known to the nearest few hundred yards, but astronomers refuse to be satisfied with that. So astronauts on one of the first flights to the earth's satellite will take mirrors with them and set them up there. These mirrors—like the corner of a room—will consist of three reflecting planes standing at right angles to each other and will have the property of returning any light that strikes them back to the source of the light.

This mirror system will be bombarded from the earth by a laser emitting flashes of light each lasting for a hundred millionth of a second. The laser will be used in conjunction with a telescope with an aperture of 1.50 meters. The light reflected from the moon will be picked up by this telescope and led to a photo-copier.

The distance of the moon can then be determined to one and a half meters from the known speed of light and the time taken by a laser beam for the journey there and back.

The same kind of thing is also conceivable in reverse. Radio waves have been traversing the universe for a very long time. If my hypothesis is correct, isn't it credible that unknown intelligences are also announcing themselves to us? For example, the radiation energy of CTA 102 suddenly increased in the autumn of 1964; Russian astronomers informed the world that they had possibly received signals from an extraterrestrial supercivilization. (Radio star CTA 102 was listed under catalog number 102 by radio astronomers of the California Institute of Technology—hence its name.)

The astronomer Sholomitski said in the lecture room of the Sternberg Astrological Institute in Moscow on April 13, 1965: "At the end of September and the beginning of October, 1964, the radiation energy from CTA 102 was much stronger, but only for a short time, then it diminished again. We registered this and waited. Toward the end of the year the intensity of the source suddenly increased again; it reached a second peak exactly 100 days after the first record was taken." His chief, Professor I. S. Shklovskii, added that such fluctuations in radiation were very unusual.

Meanwhile Dutch astrophysicist Maarten Schmidt has found out by exact measurements that CTA 102 must be about 10 billion light-years from the earth. That means that if the radio beams originated from intelligent beings, they must have been radiated 10 billion years ago. But according to the calculations of present-day research, our planet simply

did not exist at that time. This realization could mean a kind of *coup de grâce* to the search for other living beings in the universe.

But if the search for life in the universe had no chance of success, astrophysicists in America and Russia, at Jodrell Bank, England, and at Stockert near Bonn in Germany would not be concentrating their research on what are known as radio stars and quasars with enormous directional antennae. The fixed stars Epsilon Eridiani and Tau Ceti are respectively 10.2 and 11.8 light-years away from us. So radio waves aimed at these "neighbors" would be about 11 light-years under way, and an answer from them could reasonably reach us in 22 years. Radio communications with more distant stars would take correspondingly longer; civilizations situated at distances reckoned in millons of light-years are quite unsuitable to contact by means of radio waves. But are radio waves our only technical means of making such attempts?

For example, we could also make ourselves optically noticeable. A powerful laser beam directed at Mars or Jupiter could not remain unnoticed, provided that intelligent living beings are in existence there. ("Laser" is the abbreviation for "light amplification by the stimulated emission of radiation.") Another, somewhat fantastic-sounding possibility would be to cultivate vast areas of soil so that tremendous color contrasts appeared which at the same time represented a geometrical or mathematical symbol of universal validity. One audacious but perfectly realizable idea: a gigantic equilateral triangle would have its 600-mile-long sides sown with potatoes; in this enormous triangle a circle would be sown with wheat. In this way a vast yellow circle, surrounded by a green equilateral triangle, would appear every summer. Incidentally, a most useful and productive experiment! But if there are unknown intelligences that seek us as we seek them, the coloring of circle and triangle would be a hint to them that

these shapes were no freaks of nature. Someone has also advocated erecting a chain of lighthouses which radiate their lights vertically. The resultant sea of light should be arranged to have the shape of a model of an atom.

There are all kinds of suggestions based on the premise that someone somewhere is watching our planet. Are we tackling the problem the wrong way by limiting ourselves to the kind of means suggested above?

However skeptical or antipathetic we may be to everything occult, we cannot avoid looking into some as yet inexplicable physical phenomena, for example the thought transference between intelligent brains that is proved on a broad scientific basis but not yet explained.

In the parapsychological departments of many important universities, previously unexplained phenomena such as clairvoyance, visions, and thought transference are being investigated with accurate scientific methods. In the process all ghost and bogey stories from dubious occult sources or inspired by religious mania are separated and rejected. In this field of research, which was absolutely taboo until quite recently, we have made important advances.

In August, 1959, the *Nautilus* experiment came to an end. It not only demonstrated the possibility of thought transference but also showed that mental communication between human brains can be stronger than radio waves. This was the experiment:

Thousands of miles away from the "thought transmitter," the submarine *Nautilus* dived several hundred feet below the surface. All radio communications were interrupted, for even today radio waves do not penetrate to any appreciable depth. On the other hand, mental communication between Mr. X and Mr. Y did function.

After such scientific tests one asks oneself what else the human brain is capable of. Can it make mental communications

faster than light? The Cayce affair, which has passed into the annals of scientific literature, stimulates such suppositions.

Edgar Cayce, a simple farmer's son from Kentucky, had no idea of the fantastic capabilities that were hidden in his brain. Although he died on January 5, 1945, doctors and psychologists are still busy evaluating his actions. The strict American Medical Association gave Edgar Cayce permission to hold consultations, although he was not a doctor.

Edgar Cayce fell ill in his early youth; he was wracked by cramps; high fever was consuming his body; he fell into a coma. While the doctors were trying in vain to bring the boy back to consciousness, Edgar suddenly began to speak loudly and clearly. He explained why he was ill, named some remedies which he needed, and told them to prepare a paste from certain ingredients and smear his spine with it. Doctors and relatives were astounded because they had no idea where the boy had got this knowledge and the technical language, which was quite unknown to him. Edgar got progressively and visibly better after treatment with the medications he had named.

The incident was the talk of the state. Since Edgar had spoken in a coma, many people suggested that he should be hypnotized in order to "entice" suggestions for cures from him. Edgar would not have this at any price. Not until a friend of his fell ill did he dictate a precise prescription using Latin words which he had never heard or even seen before. A week later his friend was better again.

If the first case was soon forgotten as a minor sensation that was not to be taken seriously scientifically, the second incident caused the AMA to set up a commission which was to make reports if anything of the kind happened again and to put down in writing every single detail. In a sleeping state Cayce had knowledge and abilities which would normally be the result only of much consultation.

Once Cayce "prescribed" for a very wealthy patient a medicine that could not be procured anywhere. This man put several advertisements in widely circulating newspapers, including international ones. A young doctor wrote from Paris, saying that his father had made the medicine years ago but that production had long been discontinued. The composition of this medicine was identical with the detailed ingredients supplied by Edgar Cayce.

Later Cayce "prescribed" a medicine and also named the address of a laboratory in a town a long way away. A telephone call showed that the preparation was just being developed. A formula had been worked out, they were looking for a name, but it was not yet on sale to chemists.

The professional doctors on the commission were no believers in telepathy; they investigated soberly and objectively, verified what they observed, and knew that Cayce had never had a medical book in his hands in his life. Besieged on all sides and from all over the world, Cayce gave two consultations a day, always in the presence of doctors and always without accepting fees. His diagnoses and therapeutical prescriptions were accurate, but when he came out of his trance, he could not remember what he had said. When doctors on the commission asked him how he arrived at his diagnoses, Cayce supposed that he could put himself in contact with any brain required and gather the information he needed for his diagnoses from it. But as the patient's brain knew exactly what his body lacked, it was all very simple. He asked the brain of the sick person and then he sought out the brain in the world which could tell him what should be done. He himself, declared Cayce, was only a part of all brains.

An astonishing idea, which—transferred to the realm of technology—would look something like this. In New York a monster computer would be fed with all the known data on physics. Whenever and from wherever the computer was interrogated, it would give its answer in fractions of a sec-

ond. Another computer might be in Zurich with the whole of medical knowledge stored inside it. One in Moscow would be stuffed with all the facts about biology. Another in Cairo would have no gaps in its astronomical knowledge. In short all the knowledge in the world, arranged by branches, would be stored in various centers. Connected by radio, the computer in Cairo, if asked for medical information, would pass on the questions to the computer in Zurich in a hundredth of a second. Edgar Cayce's brain must have functioned in much the same way as this perfectly credible and already technically feasible computer linkup.

I now put forward the bold speculation: What if all (or even only a few highly trained) human brains have unknown forms of energy at their disposal and possess the ability to make contact with all living beings? We know frighteningly little about the functions and potentialities of the human brain; but it is known that only one-tenth of the cortex functions in the brain of a healthy man. What are the remaining nine-tenths doing? The fact that men have recovered from incurable diseases by willpower and nothing else is well known and scientifically documented. Perhaps a "gear" unknown to us has been engaged, setting an additional tenth or two-tenths of the cortex working. If we assume the fantastic idea that the strongest forms of energy operate in the brain, then a strong mental impulse would be noticeable everywhere simultaneously. If science succeeds in making such a "wild" idea demonstrable, it could mean that all intelligences in the universe belong to the same unknown structure.

Let me give an example. If a strong electrical impulse is released at any point in a tank full of millions of bacteria, it is felt everywhere and by every species of bacteria. The surge of current is perceived everywhere at the same moment. I quite realize that this comparison is imperfect, for electricity is a known form of energy and dependent on

the speed of light. I am concerned with a form of energy that is available and effective everywhere simultaneously. I imagine an as yet unidentified form of energy which will one day make the incomprehensible comprehensible.

In order to give a semblance of probability to the extraordinary idea, I shall quote the report of an experiment carried out May 29 and 30, 1965. In its scope and nature it must be unique. On these two days 1,008 people concentrated at the same time, indeed at the same second, on pictures, sentences, and groups of symbols, which were "radiated" into the universe by them with concentrated power. The fact of this mass experiment is not the only astonishing thing—the results are strange, too. None of the participants knew any of the others; they lived hundreds of miles apart. Yet 2.7 percent of the participants answered on forms that they had seen a picture, namely the model of an atom. Since collusion on the part of the "guinea pigs" was impossible, it is surprising that as many as 2.7 percent should have seen the same "mental picture." Telepathy? Hocus-pocus? Chance? Admittedly, the whole thing is a science-fiction subject, but the experiment, organized by scientists, did take place. It is quite obvious that we don't know everything yet. The result of a experiment by a group of physicists at Princeton University is equally inexplicable. While investigating the disintegration of electrically neutral K mesons, they reached a result that was theoretically impossible because it contradicted a long-established principle of nuclear physics.

One more extraordinary example. Einstein's theory of relativity says that mass and energy are only different forms of one and the same phenomenon ($E = mc^2$). Put simply, mass can literally be produced from the void. If a strong beam of energy is shot past a heavy atomic nucleus, the beam of energy disappears into the strong electrical field of energy of the atomic nucleus and an electron and a positron appear in its place. Energy in the form of a beam has

changed into the mass of two electrons. To the mind that has not been trained scientifically the process seems crazy, and yet it takes place exactly like that. There is nothing to be ashamed of if you cannot follow Einstein; one scientist called him the great solitary because he could discuss his theory with only a dozen or so of his contemporaries.

After this excursion into the still unexplored fields of thought transference and the functions of the human brain, let us turn back to our theme again.

It is no longer a secret that in November, 1961, in the National Radio Astronomy Observatory at Green Bank, West Virginia, eleven authorities met at a secret conference. Here, too, the theme of the conference was the question of the existence of extraterrestrial intelligences. The scientists, among them Giuseppe Cocconi, Su Shu Huang, Philip Morrison, Frank Drake, Otto Struve, and Carl Sagan, as well as the Nobel Prize winner Melvin Calvin, collaborated at the end of the conference on what is known as the Green Bank Formula. According to this formula there are at any moment in our galaxy alone 50,000,000 different civilizations which are either trying to get in touch with us or waiting for a sign from other planets.

The terms of the Green Bank Formula take into account all the aspects in question, but in addition the scientists allotted two values to each term: a normal value admissible according to our present state of knowledge and an absolute minimum value.

$$N = R_+ f_p n_e f_l f_i f_c L$$

In this formula:

R_+ = the average annual number of new stars that are like our sun;

f_p = the number of stars with possible living beings;

n_e = the average number of planets which orbit the eco-

sphere of their sun and so have adequate premises for the development of life by human standards;

f_l = the number of planets favored in this way on which life has actually developed;

f_i = the number of planets which are populated by intelligences with their own ability to act during the lifetime of their sun;

f_c = the number of planets inhabited by intelligences that already have a developed technical civilization;

L = the life-span of a civilization, for only very long-lasting civilizations could encounter each other, given the vast distances in the universe.

If we take the lowest possible figures for all terms in this formula, we get: $N = 40$.

But if we take the admissible maximum value, we get: $N = 50{,}000{,}000$.

In other words, in the most unfavorable case the fantastic Green Bank Formula calculates that there are forty groups of intelligences in our Milky Way who are seeking contact with other intelligences.

The most audacious possibility gives 50,000,000 unknown intelligences who are waiting for a sign from the cosmos. All the Green Bank calculations are based not on present astronomical figures but on the number of stars in our Milky Way since it existed.

If we accept the formula of this scientific brain trust, civilizations with more advanced technologies than ours may have existed hundreds of thousands of years ago—a fact that supports the theory put forward here of visits by "gods" from the cosmos in the dawn of time. American astrobiologist Dr. Carl Sagan assures us that according to statistical calculations alone the possibility exists that our earth may have been visited by representatives of an extraterrestrial civilization at least once in the course of its history. Fantasy and wishful thinking may be concealed in all the deliberations

and suppositions, but the Green Bank Formula is a mathematical formula and thus far removed from mere speculation.

A new branch of science is in the process of formation—what is known as exobiology. New branches of science always find it difficult to achieve recognition. Exobiology would certainly find it harder to find acceptance if recognized personalities were not already devoting their work to this new field of research which tackles extraterrestrial life with complete impartiality. What better proof of the seriousness of this new science than a group of the names which subscribe to it:

Dr. Freeman Quimby (chief of the NASA exobiological program), Ira Blei (NASA), Joshua Lederberg (NASA), L. P. Smith (NASA), R. E. Kaj (NASA), Richard Young (NASA), H. S. Brown (California Institute of Technology), Edward Purcell (professor of physics at Harvard University), R. N. Bracewells (Radio Astronomy Institute of Stanford), Charles Townes (Nobel Prize for physics, 1964), I. S. Shklovskii (Sternberg Institute, Moscow), N. S. Kardashev (Sternberg Institute, Moscow), Sir Bernard Lovell (Jodrell Bank), Wernher von Braun, Hermann Oberth, Von Braun's teacher, Ernst Stuhlinger, Eugene Sänger, and many others.

These names are representative of many thousands of exobiologists all over the world. The desire of all these men is to break through the taboos, to tear down the walls of lethargy which until now have always surrounded the desert areas of research which are specifically singled out in this book. In the face of all the opposition, exobiology exists, and one day it may become the most interesting and important field of research.

But how can a proof of life in the universe be produced until someone has been there? There are statistics and calculations that definitely favor the idea of extraterrestrial life. There is the evidence of bacteria and spores in space. The

search for unknown intelligences has begun but has not yet produced results that are measurable, demonstrable, and convincing. What we need are verifications of theories—proofs of suppositions still disqualified as Utopian today. NASA has a research program ready that is intended to produce evidence of unknown life in the cosmos. Eight different probes, each one as unique as it is complicated, are to show evidence of life on planets in our solar system.

The following are the probes planned:

Optical Rotary Dispersion Profiles
The Multivator
The Vidicon Microscope
The J-Band Life Detector
The Radioisotope Biochemical Probe
The Mass Spectrometer
The Wolf Trap
The Ultraviolet Spectrophotometer

A few hints as to what is hidden behind these technical titles that are double Dutch to the layman:

Optical Rotary Dispersion Profiles is the name of a laboratory probe with a rotary searchlight. Once landed on a planet, this light begins to emit beams and search for molecules. Molecules are well-known prerequisites for every kind of life. One of these molecules is the large spiral-shaped DNS molecule, which consists of three chemical combinations arranged next to one another: nitrogen, sugar, and phosphoric acid. When the radiated light strikes such a molecule, the search beam is interrupted, because the nitrogen base adenin in chemical association with sugar has an "optically active" effect. Since the sugar combination in the DNS molecule is "optically active," the search beam of the probe has only to encounter a sugar-adenin combination to produce an immediate signal that, automatically sent to earth, would provide proof of life on an unknown planet.

The Multivator consists of a probe weighing barely 1 pound which is carried by a rocket as light baggage and ejected when near the planet. This miniature laboratory is then in a position to conduct as many as fifteen different experiments and transmit their results to earth.

The Radioisotope Biochemical Probe is the official name of a probe developed under the nickname Gulliver. It is intended to carry out a soft landing on the surface of another planet and immediately afterward to shoot out three 45-foot-long sticky ropes in various directions. In a few minutes these ropes will be automatically withdrawn into the probe; whatever stays clinging to the ropes—dust, microbes, or any kind of biochemical substances—will be immersed in a liquid culture medium. A part of this culture solution is enriched with the radioactive carbon isotope C-14; the microorganisms introduced would logically have to produce carbon dioxide, Co_2, through their metabolism. The gas carbon dioxide can easily be separated from the liquid culture and led to a measuring apparatus which measures the radioactivity of the gas containing C-14 nuclei and radios the results to earth.

The Wolf Trap, a mini-laboratory, was originally called Bug Detector by its inventor, but his collaborators rechristened it because their chief is called Professor Wolf Vishniac. The Wolf Trap is also supposed to make a soft landing on another planet and then extend a vacuum tube with a very fragile tip. When the tube touches the ground, the tip breaks and soil samples of all kinds will be sucked into the vacuum created. Once again the probe contains various sterile culture mediums which guarantee every kind of bacteria a rapid growth. This multiplication of the bacteria makes the liquid medium cloudy, and the pH value (the degree of acidity) of the liquid also changes. Both changes can be easily and accurately measured—the cloudiness of the liquid with the help of a beam of light and a photocell, the change in

the acid content by an electrical pH measurement. These results would also enable us to make conclusions about existing unknown life.

Millions of dollars will be spent on the NASA program and coordinated research for the investigation and proof of extraterrestrial life. The first bioprobes will be sent to Mars. Undoubtedly man will soon follow the mini-laboratories which are the forerunners. The senior officials of NASA are unanimous in saying that the first astronauts will land on Mars by September 23, 1986, at the latest. This precise date has a reason. 1986 will be a year with little solar activity. Dr. Von Braun supports the view that men could land on Mars as early as 1982; NASA does not lack the technical resources, only an adequate and unbroken financial grant from Congress. In addition to all the current American responsibilities, two money swallowers such as the war in Vietnam and the space program are a heavy burden for even the richest nation in the world.

The plan for travel to Mars exists. The Mars spaceship has been designed. It "only" needs to be built as well. A model of it stands on the desk of an unusual man in Huntsville—Dr. Ernst Stuhlinger. Stuhlinger is director of the Research Project Laboratory, which is part of the George C. Marshall Space Flight Center in Huntsville, Alabama. He employs more than 100 scientific collaborators in his laboratories. They experiment in plasma-, nuclear-, and thermophysics and also occupy themselves with the basic research for projects pointing into the future. The research for the electric rocket motor of the future is forever linked with the name of Dr. Stuhlinger. He is the designer of the Mars spaceship which will carry men to the red planet in our century.

Dr. Stuhlinger was brought to the United States soon after World War II by his friend Dr. Wernher von Braun; in Fort Bliss they made rockets for the Air Force. Accom-

panied by 162 fellow countrymen, the two rocket pioneers moved to Huntsville after the outbreak of the Korean War in order to conjure up a project such as even America, accustomed as it is to gigantomania, has never seen before.

In those days Huntsville was a small, sleepy nest on the edge of the Appalachian Mountains. With the arrival of the rocket men the little cotton town turned into a circus. Factories, rocket testing platforms, laboratories, giant hangars, and corrugated iron offices shot up from the ground breathtakingly fast in a few years. Today more than 150,000 people live in Huntsville; the little town has awakened from its sleep and its inhabitants have become enthusiastic space fans. When the first Redstone rockets thundered away from the testing platform, many Huntsvillites ran down into their cellars in panic. Nowadays, when a Saturn rocket is tested and a roar fills the air as if the world were coming to an end in the next second, nobody takes any notice. Huntsvillites always carry their earplugs with them, just as Londoners carry their umbrellas. They call their town simply Rocket City, and if Congress does not grant the hundreds of thousands of millions of dollars demanded for space travel, they get bad-tempered and start agitating. They have every reason to be proud of their "Germans" and NASA, for Huntsville has grown into the biggest NASA center of all. Here the rockets that make headlines all over the world are thought up and designed, from the little Redstone to the gigantic Saturn V. At launching, the tanks are filled with some 880,000 gallons of highly explosive fuel, which develops a propulsive force of 150,000,000 horsepower. The giant rocket weighs almost 3,000 tons. In Huntsville some 7,000 technicians, engineers, and scientists of related disciplines are working under Wernher von Braun toward the great goal, the conquest of space. In 1967 about 300,000 scientists of all kinds were working on America's global space program. More than

20,000 industrial firms are working for the greatest research undertaking in history.

When I visited Huntsville, Austrian scientist Dr. Pscherra told me that the research groups constantly had to develop new "articles" which had never before been produced anywhere in the world.

"Look here!" he said and showed a large cylinder from which came a humming, rumbling noise. "In there we are conducting lubricating experiments in an absolute vacuum. Do you know that we cannot use any of the countless lubricants produced in the world? They lose all their lubricating qualities in space. With available lubricants even a simple electromotor stops functioning after at most half an hour in airless space. What else could we do but invent a lubricant which works perfectly even in an absolute vacuum?"

A terrible groaning and whining came from another room. Two tremendous vises, firmly anchored to the floor, were trying to pull a four-inch-thick sheet of metal to pieces.

"Another series of experiments that we would willingly dispense with," said Dr. Pscherra, "but our experience has shown that existing metal alloys do not stand up to the stresses of space. So we must find ones that meet our requirements. That is the reason for these tensile probes and fatigue experiments under every conceivable kind of space situation. We also have to develop new welding techniques. The welded joints must be subjected to cold, heat, vibration, tensile-strength and pressure tests, so that we can find out the limits at which a welded joint breaks."

The hostess who accompanied me looked at her watch. Dr. Pscherra looked at his watch. Everyone was looking at his watch. NASA personnel, of course, don't notice it anymore; the visitor finds it curious at first, but he soon gets used to it, for looking at one's watch is a standard gesture of NASA personnel at Cape Kennedy, Houston, and Huntsville. They

always seem to be making a countdown: four . . . three . . . two . . . one . . . zero.

Rides and walks through halls, corridors, and doors led, after many more security controls, to Mr. Pauli, who also comes from German-speaking Europe and has been working for NASA for thirteen years. I had a white helmet bearing the NASA symbol crammed on my head; Mr. Pauli took me to the testing platform of the Saturn V. The simple words "testing platform" mean a concrete colossus that weighs several hundred tons, is several stories high, has lifts and cranes leading to it, and is surrounded by ramps in which a bewildering network of many miles of cables is installed. Once it is ignited, Saturn V makes a din which can be heard 12 miles from the launching ground. The testing platform, deeply anchored in rock and concrete, rises as much as three inches from its base during such trials, while 333,000 gallons of water per second are pumped through a sluice for cooling purposes. Merely for cooling trial rockets on the testing platform, NASA had to build a pumping works that could supply a city the size of Manchester with drinking water. A single firing test costs a cool $14,000,000; space does not come cheaply.

Huntsville is one of the many NASA centers. The reader should note them because later they may become the departure stations for space flights:

Army Research Center, Moffet Field, California
Electronics Research Center, Cambridge, Massachusetts
Flight Research Center, Edwards, California
Goddard Space Flight Center, Greenbelt, Maryland
Propulsion Laboratory, Pasadena, California
John F. Kennedy Space Center, Florida
Langley Research Center, Hampton, Virginia
Lewis Research Center, Cleveland, Ohio
Manned Spacecraft Center, Houston, Texas

Nuclear Rocket Development Station, Jackass Flats, Nevada

Pacific Launch Operations Office, Lompoc, California

Wallops Station, Wallops Island, Virginia

Western Operations Office, Santa Monica, California

NASA Headquarters, Washington, D.C.

The spaceship industry has long overtaken the automobile industry as a pacesetter in the market. On July 1, 1967, 22,828 people were working at the Cape Kennedy Space Center; the annual budget for this station alone amounted to $475,784,000 in 1967!

All that because a few crazy people want to go to the moon? I think I have already given sufficient convincing examples of what we owe research into space travel today (and these only as by-products), ranging from objects in everyday use to complicated medical apparatus which saves people's lives every hour of the day all over the world. The supertechnology in the course of development is truly no scourge of mankind. It is carrying mankind into the future which begins anew daily with seven-league boots.

The author had a chance to ask Wernher von Braun for his opinion of the hypotheses put forward in this book:

"Dr. Von Braun, do you consider it possible that we shall find life on other planets in our solar system?"

"I consider it possible that we shall come across lower forms of life on the planet Mars."

"Do you consider it possible that we are not the only intelligences in the universe?"

"I consider it extremely probable that not only plant and animal life but also intelligent living creatures exist in the infinite reaches of the universe. The discovery of such life is a most fascinating and interesting task, but considering the enormous distances between our own and other solar systems and the still greater distances between our galaxy

and other galactic systems, it is doubtful whether we shall succeed in proving the existence of such forms of life or getting into direct communication with them."

"Is it conceivable that older, technically more advanced intelligences live or have lived in our galaxy?"

"Up to the present we have no proof or indication that older and technically more advanced living beings than ourselves live or have lived in our galaxy. However, on the basis of statistical and philosophical considerations, I am convinced of the existence of such advanced living beings. But I must emphasize that we have no firm scientific basis for this conviction."

"Is there a possibility that older intelligences could have paid a visit to our earth in the dim mists of time?"

"I won't deny this possibility. But to the best of my knowledge no archaeological studies have so far provided any basis for that kind of speculation."

Here my conversation with the "father of the Saturn rocket" ended. I could not tell him in detail about all the remarkable discoveries, the absurdities, the old books handed down to us as unsolved puzzles—the countless questions that archaeological finds force upon us when considered with space eyes. But Dr. Von Braun awaits the documentation of this book.

12

Tomorrow

WHERE do we stand today?
Will man dominate space one day?

Did unknown beings from the infinite reaches of the cosmos visit the earth in the remote past?

Are unknown intelligences somewhere in the universe trying to make contact with us?

Is our age, with its discoveries that are taking the future by storm, really so terrible?

Should the most shattering results of research be kept secret?

Will medicine and biology discover a way of restoring deep-frozen men to life?

Will men from earth colonize new planets?

Will they mate with the inhabitants they find there?

Will men create a second, third, and fourth earth?

Will special robots replace surgeons one day?

Will hospitals in the year 2100 be spare-part stores for defective men?

Will it become possible in the distant future to prolong

man's life indefinitely with artificial hearts, lungs, kidneys, etc.?

Will Huxley's *Brave New World* come true one day in all its improbability and chilling inhumanity?

A compendium of such questions could easily get as big as the New York telephone directory. Not a day passes without something brand new being invented somewhere in the world—every day another question can be struck from the list of impossibilities as answered. Edinburgh University received a preliminary grant of $6,480,000 from the Nuffield Trust for the development of an intelligent computer. The prototype of this computer was put into conversation with a patient, and afterward the patient would not believe that he had been talking to a machine. Dr. Donald Michie, who designed this computer, claimed that his machine was beginning to develop a personal life.

The new science is called futurology! It's goal is the planning and detailed investigation and understanding of the future by all the technical and mental means available. Think tanks are springing up all over the world; what they amount to are monasteries of scientists of today, who are thinking for tomorrow. There are 164 of these think tanks at work in America alone. They accept commissions from the government and heavy industry. The most celebrated think tank is the Rand Corporation at Santa Monica in California. The U.S. Air Force was responsible for its foundation in 1945. The reason? High-ranking officers wanted a research program of their own on intercontinental warfare. Some 850 selected scientific authorities now work in the two-story magnificently laid-out research center. The first ideas and plans for the foundations of mankind's most improbable adventures are born here. As early as 1946 Rand scientists evaluated the military usefulness of a spaceship. When Rand developed the program for various satellites in 1951, it was called Utopian. Since Rand has been functioning, the world

can thank this research center for 3,000 accurate accounts of hitherto unobserved phenomena. Rand scientists have published more than 110 books, which have advanced our culture and civilization immeasurably.

There is no end in sight to this research work, and there is unlikely to be one.

Similar work for the future is being done in the following institutes: The Hudson Institute at Harmon-on-Hudson, New York; the Tempo Center for Advanced Studies belonging to General Electric at Santa Barbara, California; the Arthur Little Institute at Cambridge, Massachusetts, and the Battelle Institute at Columbus, Ohio.

Governments and big business simply cannot manage without these thinkers for the future. Governments have to decide on their military plans far in advance; big businesses have to calculate their investments for decades ahead. Futurology will have to plan the development of capital cities for a hundred or more years ahead.

Equipped with present-day knowledge, it would not be difficult to estimate, say, the development of Mexico for the next fifty years. In making such a forecast, every conceivable fact would be taken into account, such as the existing technology, means of communication and transport, political currents, and Mexico's potential opponents. If this forecast is possible today, unknown intelligences could certainly have made such a forecast for the planet Earth 10,000 years ago.

Mankind has a compulsive urge to think out in advance and investigate the future with all the potentialities at its command. Without this study of the future, we would probably have no chance of unraveling our past. For who knows whether important clues for the unraveling of our past do not lie around the archaeological sites, whether we do not trample them heedlessly under foot because we do not know what to make of them.

That is the very reason why I advocated a "Utopian archaeological year." In the same way that I am unable to "believe" in the wisdom of the old patterns of thought, I do not ask others to "believe" my hypothesis. Nevertheless, I expect and hope that the time will soon be ripe to attack the riddle of the past without prejudice—making full use of all the refinements of technology.

It is not our fault that there are millions of other planets in the universe.

It is not our fault that the Japanese statue of Tokomai, which is many thousands of years old, has modern fastenings and eye apertures on its helmet.

It is not our fault that the stone relief from Palenque exists.

It is not our fault that Admiral Piri Reis did not burn his ancient maps.

It is not our fault that the old books and traditions of human history exhibit so many absurdities.

But is our fault if we know all this but disregard it and refuse to take it seriously.

Man has a magnificent future ahead of him, a future which will far surpass his magnificent past. We need space research and research into the future and the courage to tackle projects that now seem impossible. For example, the project of concerted research into the past which can bring us valuable memories of the future. Memories which will then be proved and which will illuminate the history of mankind—for the blessing of future generations.

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GODS FROM OUTER SPACE

Return to the Stars
or Evidence for the Impossible

ERICH VON DÄNIKEN

Translated by Michael Heron

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About Erich von Däniken

ERICH VON DÄNIKEN is not a scholar. He is an autodidact, which the dictionary defines as a man who is self-taught. Probably this helps explain the success his first book met with all over the world. Completely free from all prejudices, he had to demonstrate personally that his theses and theories were not unfounded and hundreds of thousands of readers were able to follow him along the adventurous road he took—a road that led into regions that were surrounded and protected by taboos.

Besides, his fearless questioning of all the previous explanations of the origin of the human race seems to have been long overdue. Erich von Däniken was not the first man who dared to challenge them, but his questions were more impartial, more direct and more audacious. In addition, he was able to say exactly what he wanted to say, unlike a professor, for example, who would have felt bound to take the opinions of his colleagues or the representatives of similar academic disciplines into consideration. What is more, he came up with some startling answers.

Men who bluntly ask bold questions that cast doubt on time-honored, accepted explanations have always been a nuisance and people have never been over-fussy about how they silenced them. In the past their books were ban-

ished to secret libraries or put on the index; today people try to hush them up or make them look ridiculous. Yet none of these methods has ever succeeded in disposing of questions which concern the reason for our very existence.

Erich von Däniken has the spontaneity of the enthusiast. In the summer of 1968 he read articles by Vlatcheslav Saizev in the Soviet journal *Sputnik* with titles such as "Spaceship in the Himalayas" and "Angels in Spaceships." Von Däniken booked a flight to Moscow on the spot. There Professor Shklovsky, director of the Radio Astronomic Department of the Soviet Academy of Science's Sternberg Institute, answered his questions.

The author of *Chariots of the Gods?* was barely nineteen years old when his curiosity first drove him to Egypt where he hoped to track down the real meaning of some cuneiform inscriptions. Since his first journey in 1954, he hops on planes to clear up his theories the way we catch a bus. Thinking on the space scale as he does, distance means nothing to him so long as the goal of his journeys provides arguments for the impossible.

WILHELM ROGGERSDORF

Foreword

THE desire for peace, the search for immortality, hankering for the stars—all these are deeply rooted in the human consciousness and have been ceaselessly pressing for realization from time immemorial.

Is this urge for realization that is so deeply implanted in human beings something to be taken for granted? Is it really only a question of human desires? Or does this striving for fulfillment, this nostalgia for the stars, conceal something quite different?

I am convinced that our longing for the stars is kept alive by a legacy bequeathed by the "gods." Memories of our terrestrial ancestors and memories of our cosmic teachers are both at work in us. Man's acquisition of intelligence does not seem to me to have been the product of a long and tedious development. The process took place too suddenly for that. I think that our ancestors received their intelligence from the "gods," who must have possessed knowledge that made the whole process a rapid one.

Obviously we shall not find proofs of my assertion on the earth if we stick to the existing methods of archaeological investigation. If we do, we shall simply and inexorably increase the existing collections of human and ani-

mal remains. Each find will be given its catalog number, put in a glass case in a museum and kept clean by the museum staff. But we cannot approach the heart of the matter with such methods alone. For the heart of the matter, I am convinced, lies in the important questions of when and how our ancestors became intelligent.

This book is an attempt to provide new arguments for my theory. It is meant to be another peaceful incentive to reflection about the past and future of mankind. For too long we have failed to investigate our remote past with daring and imagination. It will not be possible to produce the last conclusive proofs in one generation, but the walls which still separate fantasy from reality will have more and more breaches in them. I shall try to do my best to keep on breaking through them with new aggressive questions. Perhaps I shall be lucky. Perhaps questions of the kind that are also asked by Louis Pauwels, Jacques Bergier, and Robert Charroux will be answered in my lifetime.

I should like to thank the countless readers of my *Chariots of the Gods?* for their letters and suggestions. I want them to accept this book as the response to their encouragement.

I should like to thank everyone who helped me write this new book. I wrote it during my imprisonment on remand in the Remand Prison of the canton of Graubünden in Chur.

ERICH VON DÄNIKEN

Gods from Outer Space

I

Interstellar Space Flight Is Possible

WHEN Thomas Edison invented his carbon filament lamp in 1879, gas shares fell overnight. In England, Parliament set up a Committee of Inquiry to examine the future possibilities of the new method of lighting. Sir William Preece, Postmaster General and chairman of the committee, told the House of Commons that it had reached the conclusion that electric light in the home was fanciful and absurd.

Today electric lights burn in every house in the civilized world.

Obsessed by man's age-old dream of being able to fly, Leonardo da Vinci spent years secretly working on the construction of flying machines that were amazingly like the prototype of the modern helicopter, but he hid his sketches for fear of the Inquisition. When they were published in 1797, the reaction was unanimous that heavier-than-air machines could never leave the ground. Even at the beginning of this century the celebrated astronomer Simon Newcomb thought that a motive force powerful enough to enable flying machines to cover long distances was inconceivable.

Yet only a few decades later airplanes were carrying tremendous loads over land and sea.

Reviewing Professor Hermann Oberth's book *Rockets to Planetary Space* in 1924, the world-famous periodical *Nature* commented that a space rocket project would probably only become practicable shortly before mankind became extinct. Even during the 1940's when the first rockets had already been launched from the earth's surface and flown hundreds of miles, doctors insisted that any kind of manned space travel was impossible because the human metabolism would be unable to stand the condition of weightlessness for several days on end.

Yet mankind has not died out and rockets are a familiar sight, and contrary to all predictions the human metabolism can obviously stand the condition of weightlessness.

What I am saying is that at some time or other the technical feasibility of every new idea vitally affecting the life of mankind was not proven. Proof of its practicability was always preceded by the speculation of the so-called visionaries who were violently attacked or, what is often harder to stomach, laughed at condescendingly by their contemporaries.

I admit quite frankly that in this sense I am a visionary, too, but I do not live in splendid isolation with my speculations. My conviction that intelligences from other planets have visited the earth in the remote past is already under serious consideration by many scientists in both East and West.

For example, Professor Charles Hapgood told me during my stay in the United States that Albert Einstein, whom he had known personally, was in complete sympathy with the idea of a prehistoric visit by extraterrestrial intelligences.

In Moscow, Professor Josef Samuilovich Shklovsky, one of the leading astrophysics and radio astronomers of our day, assured me that he was convinced that the earth had received a visit from the cosmos at least once.

The well-known space biologist Carl Sagan of the United States also does not exclude the possibility that "the earth has been visited by representatives of an extraterrestrial civilization at least once in the course of its history."

And Professor Hermann Oberth, the father of the rocket, told me in these words: "I consider a visit to our planet by an extraterrestrial race to be extremely probable."

It is gratifying to know that under the pressure of successful space flights science is beginning to concern itself intensively with ideas that were absolutely taboo only decades ago. And I am convinced that with every rocket that shoots into the universe, the traditional opposition to my theory about the "gods" will get weaker and weaker.

Only ten years ago it was absurd to talk about the existence of another form of intelligent life in the universe. Today no one seriously doubts that extraterrestrial life exists in the cosmos. When eleven scientific experts separated after a secret conference in Green Bank, West Virginia, in 1961, they had agreed on a formula which calculated up to 50,000,000 civilizations in our galaxy alone. Roger A. MacGowan, who holds an important NASA appointment in Redstone, Alabama, even arrives at a figure of 130 billion possible cultures in the cosmos, basing his theory on the most recent developments in astronomy.

These estimates seem comparatively modest and cautious if it proves to be true that the key of life—*i.e.*, the generation of all life from the four bases adenine, cytosine, guanine and thymine—controls the whole cosmos. If this *is* the case, the universe must be literally teeming with life.

Crushed by the facts, people reluctantly admit today that space travel within our solar system is conceivable, but in the same breath they say that they consider inter-

stellar space travel impossible because of the vast distances. Like a conjurer, they whip out of the hat the statement that because interstellar space travel will never be possible in the future, our earth cannot have been visited in the past by unknown intelligences because they would have had to have been able to traverse interstellar space. And that's that!

But why should not interstellar space travel be possible? Working on the speeds that seem possible to us today, it is calculated that the journey to our nearest fixed star Alpha Centauri, which is 4.3 light years away, would take 80 years—in other words no man could survive the flight there and back. Is this calculation correct? Admittedly, the average expectation of life today is about 70 years. The training of space pilots is complicated; even the most intelligent young man would not be able to pass his examinations as an astronaut before he was twenty. And if he were over sixty, he would hardly be sent on a space mission. That leaves only 40 years as an active astronaut. It sounds quite logical to say that 40 years is not long enough for an interstellar expedition.

But that is a fallacy. Even a simple example shows why and simultaneously demonstrates how hard it is for us to escape from traditional patterns of thought whenever we tackle projects for the future. Let us suppose that I am given an accurate calculation showing that it is impossible for a water bacteria to move from point A to point B during its life-span because the microbe can only move at speed x and neither the current nor the slope of the watercourse can increase the speed x by more than y per cent at most. That sounds convincing, but there is a mental error in the calculation. The water bacteria can move from A to B in many different ways. For example, we can freeze it. Then the ice cube containing the bacteria travels from A to B in an aircraft. The ice is melted and the microbe has reached its goal. Yes, someone will retort, if you switch off

its vital functions. But it seems to me a perfectly feasible, indeed highly practical, method of transporting the microbe—just as I think (which is why I gave this example) that we have reached the stage when we must replace obsolete methods by new ones.

In spite of all the objections to it, there is nothing far-fetched about my forecast that in the not too distant future it will be possible to freeze astronauts, thaw them out again on a set date, and restore the use of their functions. Professor Alan Sterling Parkes, member of the National Institute for Medical Research in London, supports the view that by the early 1970's medical science will already have perfected a method of preserving organs for transplants indefinitely at low temperatures.

Anyway, the whole has always been equal to the sum of its parts, which is why I am convinced that my forecast is right.

In all experiments on animals, one problem that constantly recurs is how to keep the brain cells alive, since they die rapidly without oxygen. The fact that research teams of the U.S. Navy, the U.S. Air Force, as well as firms such as General Electric and the Rand Corporation, are working full time on it shows how seriously the solution of this problem is taken. The first reports of success come from the Western Reserve School of Medicine in Cleveland, Ohio, where the brains of five rhesus monkeys were separated from their bodies and kept functioning for as much as eighteen hours. The separated brains reacted unhesitatingly to noises.

These experiments are basically connected with the idea of constructing a "cyborg" (the abbreviation of "cybernetic organism"). In a speech the German physicist and cyberneticist Herbert W. Franke put forward the sensational idea that in the decades to come spaceships would journey to unknown planets without astronauts aboard and search the universe for extraterrestrial intelligences.

Space patrols without astronauts? Franke assumes that the electronic equipment would be operated by a brain separated from a human body. This "solo" brain, kept in a liquid culture medium which would have to be constantly replenished with fresh blood, would be the control center of the spaceship. Franke thinks that the brain of an unborn child would be the most suitable for programming because, not being burdened with mental processes, it could be fed with the data and information necessary for the special tasks of space travel. This programmed brain would lack the consciousness that makes normal brains "human." Herbert W. Franke says: "Stimulations, as we know them, would be alien to the cyborg. It would have no feelings. The human solo brain is promoted to ambassador of our planet." Roger A. MacGowan also predicts a cyborg, half living being, half machine. In the view of this scientific authority the cyborg will ultimately reach the stage of a completely electronic being, whose functions are programmed in a solo brain and translated into orders by the latter.

The Frankfurt Jesuit Paul Overhage, who enjoys considerable fame as a biologist, said about this fantastic project for the future: "Its realization can scarcely be doubted because the rapid progress of biotechnology is constantly making it easier to carry out experiments of this kind."

During the last two decades molecular biology and biochemistry have advanced very rapidly and achieved results which have completely changed a great deal of medical science and practice. The ability to slow down the process of aging or even interrupt it completely lies within our grasp, and even the fantastic construction of a cyborg has already been removed from the realm of pure imagination.

Naturally these projects create moral and ethical problems which will perhaps be harder to solve than the actual

medicotechnical problems. But all this will fade into insignificance if we keep our eye on the other highly probable possibility that one day spaceships will reach such incredible speeds that they can traverse cosmic distances even within the normal life-span of astronauts.

The explanation of this technical phenomenon lies in the time dilation effect, which is already an accepted scientific fact.

We must realize that "terrestrial years" are quite irrelevant as far as passengers on an interstellar space journey are concerned. In a spaceship traveling just below the speed of light, time creeps by slowly in comparison with the time that rushes along on the launching planet. This can be accurately calculated by mathematical formulae. Incredible as it may seem, we do not have to take these calculations on trust; they have been proved.

We must free ourselves from *our* conception of time, *i.e.*, terrestrial time. Time can be manipulated by speed and energy. Our space-traveling grandchildren will break the time barriers.

Those who doubt the technical possibility of interstellar space travel adduce an argument that deserves close examination. They say that even if rocket propulsion units were ultimately built to reach a speed of 93,000 miles per second or more, interstellar space travel would still be impossible because at such a speed the minutest cosmic particles that struck the exterior of the spaceship would have the destructive and penetrative power of a bomb. Undoubtedly that objection cannot be rejected lightly, but how long will it be valid? Scientists in the United States and the Soviet Union are already engaged in the development of electromagnetic safety rings to divert the dangerous particles floating in space away from spaceships. These research projects have already met with some success.

The skeptics also say that a speed of more than 186,000

miles per second is just a utopian dream because Einstein has proved that the speed of light is the absolute limit of velocity. Even this counterargument is only valid if one starts from the premise that spaceships of the future will have to be launched with the energy of millions of gallons of fuel and carried into the universe with the same source of energy. Today radar sets operate with waves traveling at 186,000 miles per second. But, the reader will ask me, what connection have waves with the propulsion of spaceships of the future?

In their book *The Planet of Impossible Possibilities,* the two Frenchmen Louis Pauwels and Jacques Bergier describe the fantastic project of the Soviet scientist K. P. Stanyukovich, who is a member of the Commission for Interplanetary Communications of the U.S.S.R.'s Academy of Sciences. Stanyukovich plans a space sonde which will be propelled by antimatter. Since a sonde travels faster the faster the particles on board it are emitted, the Moscow professor and his team hit upon the idea of constructing a flying lamp that worked by the emission of light instead of red-hot gases. The speeds that can be reached in this way are enormous. As Bergier tells us: "The passengers in such a flying lamp would not notice anything unusual. Gravity inside the spaceship would be the same as on earth. They would feel that time was passing in the normal way, yet in a few years they would have reached the most distant stars. After 21 years (by their time), they would be in the heart of the Milky Way, which is 75,000 light years from the earth. In 28 years they would reach the Andromeda Nebula, our nearest galaxy, which is 2,250,000 light years away."

Professor Bergier, a world-famous scientist, emphasizes that these calculations have nothing to do with science fiction because Stanyukovich has verified in his laboratory a formula that can be checked by anyone who knows how to use a table of logarithms. According to one of these

calculations, only 65 years of cosmic time would pass for the crew of the flying lamp, while 4,500,000 years would go by on our planet!

Even in my wildest flights of fancy I cannot imagine the consequences of a development that is brewing in the dark mists of the future. In 1967, Gerald Feinberg, professor of theoretical physics at Columbia University in New York, published his theory of tachyons in the scientific journal *Physical Review* ("tachyon" comes from the Greek word *tachys,* or "fast"). His article was not just the ravings of a visionary; it described a piece of serious scientific research. A course of lectures on it has already been given at the Eidgenössischen Technischen Hochschule in Zurich.

The following is a brief description of the tachyon theory. According to Einstein's theory of relativity, the mass of a body grows in relation to the increase in its velocity. A mass (= energy) that reached the speed of light would be infinitely large. Feinberg supplied mathematical proof that there was a counterpart to Einsteinian mass, namely particles that move infinitely fast, but become slower when they approach the speed of light. According to Feinberg, tachyons are a billion times faster than light, yet they cease to exist when they are reduced to the speed of light or below it.

Just as the theory of relativity (without which present-day physics and mathematics simply could not function) had only a mathematical proof for decades, tachyons are not yet demonstrable experimentally, but only mathematically. However, Feinberg is working on an experimental proof.

Believing in the future as I do, my fantasy runs away with me when I hear about research of this kind. Time and again during the last hundred years we have ultimately lived to see things that were considered impossible in the form of industrially manufactured products. So on

this occasion I think I am entitled to enlarge upon an idea that, as I have said, is still in its infancy.

What might happen in the future?

If it became possible to capture tachyons or produce them artificially, they could also be transformed into the propulsive energy for space sondes. Then, I assume, a spaceship would be brought up to the speed of light using a photon propulsion unit. As soon as it was reached, a computer would automatically switch on the tachyon propulsion unit. How fast would the spaceship travel then? A hundred, a thousand times faster than light? No one knows the answer today. Scientists suspect that once past the speed of light, so-called Einsteinian space would be left behind and the spaceship hurled into an as yet undefined, superimposed space. But at this vital moment in the history of space travel the time factor would become almost meaningless.

I know of many fields of research in which the work going on is mainly devoted to the service of interstellar space travel. I have been in many laboratories and talked to many scientists. No one knows how many physicists, chemists, biologists, atomic physicists, parapsychologists, geneticists, and engineers are working on the project that will enable man to fly back to the world of the stars—they are often lumped together, somewhat inaccurately, under the generic name of futurological projects.

It seems to me to be an under-evaluation of the human potential if, under the pressure of proof provided by technological advances, people admit the possibility of investigating cosmic space at some future date, but obstinately deny that the universe may contain intelligences who knew all about interstellar space travel thousands of years before we did and so could have visited our planet.

Because it has long been the custom to hammer into us as schoolchildren the presumptuous idea that man is the lord of creation, it is obviously a revolutionary and un-

pleasant thought that many thousands of years ago there were unknown intelligences who were superior to the lord of creation, but however disagreeable it is, we had better get used to it.

2

On the Track of Life

IN my book *Chariots of the Gods?* I put forward the speculative idea that "God" had created man *in his own image* by means of an artificial mutation. I voiced the suspicion that *Homo sapiens* became separated from the ape tribe by a deliberately planned mutation. I have been attacked for making this assertion.

Because the tracing back of the origin and development of man has so far been limited entirely to our planet, my theory that extraterrestrial beings could have had a hand in the process is a bold one. Yet if this idea was considered within the bounds of possibility, our beautiful family tree —apes scrambled down from the trees, mutated, and became the ancestors of man—would be destroyed. Since Charles Darwin (1809–82) put forward his theory of natural selection, all fossil finds, from the skeletons of primitive apes up to *Homo sapiens,* have seemed to be convincing arguments in favor of his theory. When the teacher Johann Carl Fuhlrott (1804–87) discovered some old bones in the Neanderthal near Düsseldorf and used them to reconstruct Neanderthal man, who lived in the last interglacial age and at the beginning of the Würm glaciation, *i.e.,* from about 120,000 to 80,000 years ago, he built up his theory of ape-men on the basis of this find.

It caused quite a stir in scholarly circles. Disconcerted religious opponents of Fuhlrott's theory put forward the rather unconvincing argument that there could not be a fossil man because fossil men ought not to exist.

There are many other species in addition to Neanderthal man. The lower jaw of a kind of primate was found at El Fayum, near Cairo. It was dated to the Oligocene Age, which was between thirty and forty million years ago. If that dating is correct, it would be proof that beings resembling man must have existed long before Neanderthal man. Fossil examples of hominids have also been found in England, Africa, Australia, Borneo and elsewhere.

What do these finds prove?

They prove that we cannot say anything definite because nearly every new find throws doubt on the datings that have just been included in our textbooks. In spite of the large number of finds, it is fair to say that they give very inadequate clues to the historical continuity of the origin and development of the human race. Certainly the track of racial development from hominids to *Homo sapiens* can be followed back clearly for millions of years, but we cannot make nearly so definite a statement about the *origin of intelligence*. There are minimal indications from the remote past, but they do not add up to a whole. So far I have not been fortunate enough to hear an explanation of the origin of intelligence in man that is even tolerably convincing. There is a vast number of speculations and theories about how this miracle is supposed to have happened. That is why I believe that my theory is equally entitled to a hearing.

In the course of the thousands of millions of years of general evolution, human intelligence seems to have appeared almost overnight. If we reckon in millions of years, we can say that this event must have taken place suddenly. While still anthropoids, our ancestors created

what we call human culture astonishingly quickly. But intelligence must have made a sudden appearance for this to happen. Several million years passed before anthropoids came into being through natural mutations, but after that the hominids underwent a lightninglike development. All of a sudden, tremendous advances appear about 40,000 years ago. The club was discovered as a weapon; the bow was invented for hunting; fire was used to serve man's own ends; stone wedges were used as tools; the first paintings appeared on the walls of caves. Yet 500,000 years lie between the first signs of a technical activity, pottery, and the first finds in hominids' settlements. Loren Eiseley, professor of anthropology at the University of Pennsylvania, writes that man emerged from the animal world over a period of millions of years and only slowly assumed human features. "But," he goes on, "there is one exception to this rule. To all appearances his brain ultimately underwent a rapid development and it was only then that man finally became distinguished from his other relatives." Who was it that taught us to think?

Although I have great respect for the hard work done by anthropologists, I must frankly admit that I am not really interested in the prehistoric age that the eyeteeth of anthropoids or hominids can be proved to belong to by fossil finds. Nor do I think the date when the first *Homo sapiens* used stone tools very important. To me it is as obvious that primitive man was the most intelligent being on our planet as it is logical that the gods chose *this particular being* for an artificial mutation. I am far more interested in when primitive man first introduced moral values such as loyalty, love, and friendship into his communities. What influence were our ancestors under when they experienced this change? Who imparted the feeling of reverence? Who implanted the feeling of shame in connection with the sexual act?

Is there a plausible explanation of why savages suddenly clothed themselves? We are given vague hints about drastic changes or fluctuations in the climate. We are also told that the anthropoids wanted to adorn themselves. If that is the correct explanation, the gorillas, orangutans and chimpanzees living in the jungle would gradually have begun to wear trousers or use ornaments.

Why did the anthropoids suddenly begin to bury their fellows when they had only just outgrown an animal existence?

Who taught the savages to take the seeds of certain *wild* plants, pound them up, add water, and bake an article of food from the resulting mush?

Why anthropoids, hominids and primitive men learned nothing for millions of years and then suddenly primitive men learned so much is a question that nags at me. Has too little attention been paid to this important question up to the present?

The field of research devoted to the explanation of the origin of mankind is interesting and very worthwhile.

Yet the question why, how, and from what date man became intelligent seems to me to be at least as interesting.

Loren Eiseley writes: "Today on the other hand we must assume that man only emerged quite recently, because he appeared so explosively. We have every reason to believe that, without prejudice to the forces that must have shared in the training of the human brain, a stubborn and long-drawn-out battle for existence between several human groups could never have produced such high mental faculties as we find today among all peoples on the earth. Something else, some other educational factor, must have escaped the attention of the evolutionary theoreticians."

That is precisely what I suspect. There is a decisive factor that has not been taken into account in all the

theorizing on the subject. I doubt if we shall be able to supply the missing link without investigating the theory of visits to our planet by extraterrestrial intelligences and checking whether these beings should not be held responsible for an artificial transformation of hereditary factors, for a manipulation of the genetic code and for the sudden appearance of intelligence. I have something to say along these lines that strengthens my theory that man is a creation of extraterrestrial "gods."

In 1847, Justus von Liebig wrote in the twenty-third of his *Chemical Letters:* "Anyone who has observed ammonium carbonate, phosphate of lime or potash will obviously consider it quite impossible that an organic germ capable of reproduction and higher development can ever be formed from these materials by the action of heat, electricity or other natural forces . . ." The great chemist also claimed that only a dilettante could imagine that life had originated from dead matter. Today we know that this did happen.

Modern research assumes that the first life on earth originated one and a half billion years ago. Professor Hans Vogel writes: "In those days the barren land and the vast primordial ocean were enveloped in an atmosphere that was still without oxygen. Methane, hydrogen, ammonia, steam, and perhaps acetylene and cyanide of hydrogen as well, formed a covering around the earth, which was still devoid of life. That is the kind of environment in which the first life must have originated."

In their efforts to get on the track of the origin of life, scientists tried to make organic matter originate from inorganic matter in the conditions of the primitive atmosphere.

The American Nobel Prize winner Professor Harold Clayton Urey surmised that the primitive atmosphere had a composition far more susceptible to penetration by ultraviolet rays than our own. So he encouraged his col-

league, Dr. Stanley Miller, to check experimentally whether the amino acids necessary for the existence of all life would be formed in a primitive atmosphere created in a retort and subjected to radiation. Stanley Miller began his experiments in 1953.

He built a glass container in which he produced an artificial primitive atmosphere made up of ammonia, hydrogen, methane and steam. So that the experiment might take place in sterile conditions, he had the Miller apparatus, as it is now known in scientific literature, heated to a temperature of 180° C for eighteen hours. In the upper half of the glass sphere he fixed two electrodes, between which electrical discharges were constantly flying. In this way, using a high frequency current of 60,000 volts, a permanent miniature storm was produced in the primitive atmosphere. In a smaller glass sphere, sterile water was heated and its steam was conducted via a tube to the large sphere containing the primitive atmosphere. The cooled-off matter flowed back into the sphere containing sterile water, to be reheated there and so climb up again to the sphere containing the primitive atmosphere. In this way Miller had created in his laboratory a cycle of the kind that had gone on on earth in the beginning of time. This experiment continued for a whole week without stopping.

What came out of the primitive atmosphere which was subjected to the steady lightning flashes of the miniature storm? The primitive soup Miller had cooked up contained asparagine, alanine and glycine—in other words, amino acids necessary for the building up of biological systems. In Miller's experiment complicated organic combinations had originated from inorganic matter.

During the years that followed, countless experiments along the same lines were carried out under different conditions. Finally twelve amino acids were produced and

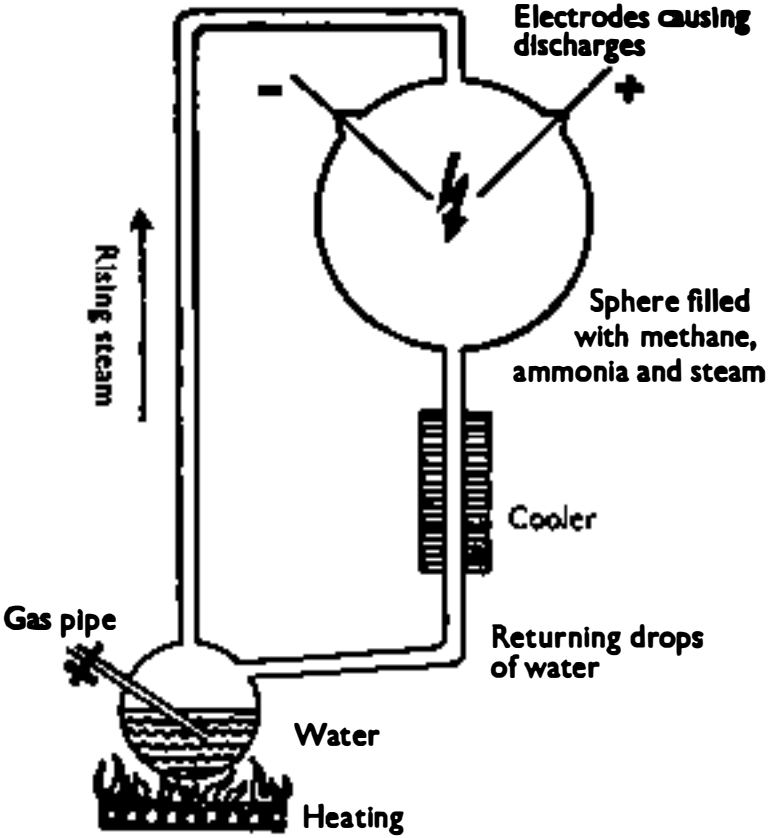


Figure 1

now no one doubts that the amino acids necessary for life can originate from the primitive atmosphere.

Other scientists used nitrogen instead of ammonia, formaldehyde or even carbon dioxide instead of methane. Miller's electrical discharges were replaced by supersonic waves or ordinary light waves concentrated into one beam. There was no change in the results! All the different primitive atmospheres, none of which contained a trace of organic life, produced amino acids and nitrogen-free organic carbonic acids every time. In some experiments

the specially treated atmosphere even produced sugar.

What are we to make of this phenomenon?

Ever since man has been able to think, he has tried to evaluate everything around him in terms of polarity: light versus dark, heat versus cold, life against death. The habit of describing all living matter as organic and all inanimate matter as inorganic also falls into the broad field of this evaluation by polarities. But just as there are many intermediate stages between all extreme designations, it has long been impossible to draw a rigid boundary line between organic and inorganic chemistry.

When our planet began to cool off, what we call the primitive atmosphere was formed from the light matter whose gas molecules were swirling about in confusion. It consisted mainly of those ingredients from which Miller brewed up his primitive soup in his laboratory experiments. Owing to the original high temperatures of the earth and its weak gravity, light gases such as helium and free hydrogen were lost in the cosmos, while the heavy gas molecules such as nitrogen, oxygen, carbon dioxide and also the heavier "noble" gas atoms were retained. Hydrogen in its free state, its elementary form, is now virtually nonexistent in our atmosphere; it is only found in chemical combinations. For example, two atoms of hydrogen together with one atom of oxygen form a molecule of the essential compound water (chemical symbol: H_2O).

The cycle got under way. Water evaporated and rose with the warm radiation from the earth in clouds of vapor which cooled off at great heights and poured down as rain. This primitive rain freed many kinds of inorganic matter from the hot stone crust and swept them into the ocean. Inorganic compounds such as ammonia and cyanide of hydrogen from the atmosphere also dissolved in the primitive ocean and took part in chemical reactions. For millions of years the earth's atmosphere grew richer in oxygen.

This development took place slowly. Today science is unanimous in saying that the transformation of the original atmosphere into our oxidizing atmosphere took about 1.2 billion years. At the beginning of this development was the primitive soup, which, with its numerous forms of matter in solution, was a first-class culture medium for the first primitive forms of life.

It is said that life is always connected with an organism, in the simplest case with the organism's cell. The fact that an organism lives is proved by its metabolism, and also shows in its development. Functions constitute life. Are all these currently accepted criteria necessarily correct? If they are, a virus does not live. A virus itself undergoes no change of matter and energy; it does not eat nor does it excrete. It only multiplies inside foreign cells by reproduction. It is a parasite.

What then is life?

Shall we ever be able to define it?

If we follow the path of the origin of life in its main stages, the vital question is: Whence the first living cell? Theodor Schwann (1810–82) and Matthias Schleiden (1804–81) carried out the fundamental research. Schwann proved that animals and plants are made up of cells; Schleiden recognized the importance of the nucleus. Then the Augustine prior Gregor Johann Mendel (1822–84), who taught natural history and physics at Brün, made his crossbreeding experiments with peas and beans. This progressive priest discovered three laws of heredity with his patient experiments and became the founder of the science of heredity. Today his laws are unanimously accepted as governing men, animals and plants.

About the middle of the nineteenth century it was proved that the cell is the carrier of all vital functions. This proof became the basis for all the big biological discoveries. Now new techniques (roentgenology, electro-

phoresis, ultramicroscopy, phase-contrast microscopy, etc.) enable us to examine cells and nuclei.

We suspect that the information centers for the storing and transmission of hereditary factors are in the cells and the nuclei.

Research in this field, which is still comparatively recent, found out that every organism has a specific number of chromosomes which have their own specific shape. Chromosomes are the carriers of hereditary factors. For example, the cells of the human body have 23 pairs of chromosomes = 46 chromosomes, a bee's cells have 8 pairs = 16 chromosomes, a sheep's cells 27 pairs = 54 chromosomes.

The protein molecules of the cells consist of chains of amino acids. Given this piece of scientific information, we were faced with the new question of how living cells originated from amino acids.

In connection with the only partially solved problem of how protein could come into being before there were living cells, Rutherford Platt describes the theory held by Dr. George Wald of Harvard University. Wald assumed that under certain natural conditions amino acids must give the answer. Dr. S. W. Fox of the Institute for Molecular Evolution, Miami, tested this idea by drying out solutions of amino acids. Fox and his collaborators observed that the amino acids formed long threadlike submicroscopic structures. They had formed chain compounds containing hundreds of amino molecules. Dr. Fox called them protenoids, *i.e.,* proteinlike matter.

Following the investigations of Professors J. Oro and A. P. Kimball, the chemists Dr. Matthews and Dr. Moser succeeded in producing protein matter from poisonous prussic acid and water in 1961. Three scientists from the Salk Institute, Robert Sanchez, James Ferris, and Leslie Orgel, managed to produce synthetically the nucleic acids essential for metabolism and reproduction—those combi-

nations of nucleic bases, carbohydrates and phosphoric acid occurring in the nuclei.

After our brief canter through chemistry and biology, the main thing for the reader to have grasped is that the construction of a living organism is a chemical process. Life can be produced in laboratories. But what connection have nucleic acids with life?

Nucleic acids determine the complicated process of heredity. The sequence of four bases—adenine, guanine, cytosine and thymine—gives the genetic code for all forms of life. Once this discovery was made, chemistry was able to remove a great deal of the mystery surrounding life.

There are two groups of nucleic acids whose names have become familiar to every assiduous newspaper reader: RNA (ribosenucleic acid) and DNA (deoxyribosenucleic acid). Both RNA and DNA are necessary for the synthesis of protein in the cells. It is a fact that the proteins of all organisms examined so far are built up of about twenty amino acids and that the sequence, or arrangement, of amino acids in a protein molecule is determined by the sequence of the four bases in the DNA, or the genetic code.

But even if we know the structure of the genetic code, we are still a long way from being able to read the information stored in a chromosome. Nevertheless, the thought that twenty amino acids are the bearers of all life and that their arrangement in protein molecules is laid down in the genetic code is earthshaking. In his book *The Biological Time Bomb* George Rattray Taylor quotes the views of the Nobel Prize winners Dr. Max Perutz and Professor Marshall W. Nierenberg on the tremendous possibilities that lie ahead.

Dr. Max Perutz says: "There are about one hundred million pairs of nucleotide bases distributed among forty-six chromosomes in a single human cell. How could we erase a specific gene from one particular chromosome, or

add one to it, or repair a single pair of nucleotides? It hardly seems practicable to me."

Professor Marshall W. Nierenberg, who played a vital role in the discovery of the genetic code, has a quite different opinion: "I have no doubt that the difficulties can be overcome one day. The only question is when. I imagine that we shall succeed in programming cells with synthetic genetic information within the next twenty-five years."

Lastly, Joshua Lederberg, professor of genetics at Stanford University in California, is convinced that we shall be able to manipulate all our hereditary factors within the next ten or twenty years.

At all events, we have now realized that an insight into hereditary factors and their transformation is possible. And since we human beings know this, there is really no reason why an extraterrestrial intelligence that is familiar with space travel and consequently thousands of years ahead of us scientifically should not know it too.

In their book *You Will Live to See It,* the physicist and mathematician Herman Kahn, director of the Hudson Institute of New York, and Anthony J. Wiener, adviser to the American government and also a member of the Hudson Institute, quote the Washington *Post* of October 31, 1966, which described the possible results of manipulating the genetic code:

> Within ten or fifteen years a housewife will be able to go into a special store, look through a selection of packets like seed packets and choose her child by the label. Each packet will contain a one-day-old frozen embryo and on the label the buyer will be able to read the color of hair and eyes, the size of body and IQ she can expect. There will also be a guarantee that the embryo has no hereditary defects. The woman will take the embryo of her choice to her doctor and have him implant it. Then it will grow in her body for nine months just like her own child.

Such forecasts of the future are possible because the DNA contains genetic information for building the cells, as well as all the other hereditary factors. The DNA is a perfect punched card for the structure of all life. For it not only codifies the twenty amino acids, but also announces the beginning and end of a protein chain with "start" and "stop," like a punched card prepared for a modern accounting machine. And just as the central unit of an electronic calculator contains a control bit whose job is to check all the calculating operations, there is a constant check on the functioning of the DNA chains in the cells.

James D. Watson, who investigated the structure of the DNA molecule so brilliantly at the age of twenty-four, has described the course of his work in his book *The Double Helix*. For the nine-hundred-word article in *Nature,* in which Watson described the bizarre spiral staircase shape of the DNA molecule, he and his fellow workers received the Nobel Prize in 1962. Yet his book came within an ace of not being published. The board of the Harvard University Press opposed his frank way of describing things. They were afraid that the myth of ascetic scientific research might be destroyed by Watson's uninhibited narrative. For he says quite bluntly that he owed his success mainly to the preliminary studies and mistakes of his colleagues.

A spectacular event took place in America in December, 1967. President Lyndon B. Johnson personally announced a great scientific achievement at a press conference in these words:

"This will be one of the most interesting articles you have ever read. An awe-inspiring achievement! It opens the door to new discoveries, to the disclosure of the fundamental secrets of life."

What kind of event was so important that the President of the United States took such an interest in it?

Scientists of Stanford University in Palo Alto, California, had succeeded in synthesizing the biologically active nucleus of a virus. Following the genetic pattern of a type of virus called Phi X 174, they had constructed from nucleotides one of the giant DNA molecules that control all vital processes. The Stanford University scientists put artificial virus nuclei into host cells. The artificial viruses developed just like natural ones. Parasites that they are, they bullied the host cells into producing millions of new viruses following the pattern of Phi X 174. Just as happens in an organism attacked by a virus infection, the artificial viruses burst through the host cells once they had used up their vital energy.

Obeying the orders given by the DNA molecule, the cells produced millionfold combinations of protein molecules from amino acids. Each new combination corresponded exactly to the programmed sample. The California scientists calculated that only one "genetic misprint" occurred in the creation of one hundred million new cells.

Barely fifteen years after the explanation of the DNA structure by Watson, Crick, and Wilkins, an important scientific discovery was made. The Nobel Prize winner Professor Arthur Kornberg and his colleagues succeeded in deciphering thousands of combinations of the genetic code for the virus Phi X 174. They had produced life in the laboratory in California.

Many readers will ask what these biochemical digressions have to do with the theme of my book. I have followed these investigations with keen interest ever since they were first reported. Why?

The conclusions reached convinced me that they had a logical consequence, which Sir Bernard Lovell, founder and director of the radio telescope station at Jodrell Bank, formulated as follows:

"In the last two years it seems that the discussion of the

question whether life exists outside our earth has become both serious and important. The seriousness of the discussion is a consequence of current scientific views, according to which the development of our solar system and of organic life on earth is probably not a unique case."

In the summer of 1969 *Physical Review Letters* announced that American scientists, using the radio telescope in Green Bank, West Virginia, had proved the existence of formaldehyde in gas and dust clouds in the universe. Formaldehyde, which is used in chemistry as a preservative and disinfectant, among other things, is a colorless, unpleasantly acrid-smelling gas. This, the most complicated chemical compound in space to date, which was ascertained from fifteen out of twenty-three sources of radiation by the American scientists, extends the list of primitive substances which are accepted as building stones of life by way of amino acids. This news provides new fuel for the suspicion that life is present in the cosmos.

But if there is life on other planets, I think it likely that unknown cosmonauts brought with them to our earth branches of knowledge of the kind we are now acquiring and that they made our ancestors intelligent by manipulation of the genetic code.

In the earliest account of the creation in the Bible we read (Genesis 5:1–2):

> In the day that God created man, in the likeness of God made he him.
>
> Male and female created he them; and blessed them, and called their name Adam, in the day when they were created.

According to my speculations, this could only have taken place by an artificial mutation of primitive man's genetic code by unknown intelligences. In that way the new men would have received their faculties suddenly—consciousness, memory, intelligence, a feeling for handicrafts and technology.

In the later biblical story of the creation (Genesis 2:21–23), we find a different version of the origin of woman:

> And the Lord God caused a deep sleep to fall upon Adam, and he slept: and he took one of his ribs, and closed up the flesh instead thereof;
>
> And the rib, which the Lord God had taken from man, made he a woman, and brought her unto the man.
>
> And Adam said, This is now bone of my bones [!], and flesh of my flesh [!]: she shall be called Woman, because she was taken out of a Man.

It is quite possible that woman was created from man, but Eve can hardly have blossomed forth in her naked beauty from the narrow rib of the male thorax by a conjuring trick—after a surgical intervention? Perhaps she originated with the help of a male sperm cell. But as according to the biblical Genesis, there was no female human being in Paradise who could have received the seed, Eve must have been produced in a retort. Now a number of cave drawings showing objects like retorts in the vicinity of primitive man have been preserved. Could foreign intelligences with a highly developed science and knowing about the immune biological reactions of bones have used Adam's marrow as a cell culture and brought the sperm to development in it? The comparatively easily accessible human rib would obviously have been the most suitable container for this biologically possible act of creation. That is a speculation, but one that is practicable in the present state of scientific knowledge.

As Eve was allotted as Adam's mate very suddenly in the Bible, there should have been a sudden spate of drawings of female beings on cave walls or Stone Age bones following the artificial creation of woman I have described. In fact there is plenty of confirmation of such a surmise. The so-called mother goddesses make their first appearance in the early Stone Age. Female Stone Age figures are found at La Gravette, France; Cukurca, in

southern Turkey; Laussel, France; Lespugne, France; Kostyenki, Ukraine; Willendorf, Austria; Petersfels, Germany; and elsewhere.

All these female figures are flatteringly described as Venuses. In nearly all of them the artists have taken pains to emphasize the sexual organs and symptoms of pregnancy. Archaeology dates these early Stone Age figures to the Gravettian. We do not know what purpose they could have served nor why they appear for the first time in the early Stone Age. It is conceivable that *Homo sapiens* originated in different parts of the world in two different ways: by the planned mutation of the genetic code of hominids and by the artificial production of a female being and her cultivation in a retort.

Nevertheless, the new men later mated with animals again. These lapses must be attributed to the old Adam because he alone remembered coupling with apelike animals. After the artificial mutation it should have been natural for the new human beings to mate with each other. Henceforth every reversion to the former habit of mating with animals that led to reproduction was a step backward. Can this backsliding have been the Fall of Man? And was it at the same time *original sin* against the building up of the new kind of cells?

A few thousand years later, the "gods" corrected this Fall. (I shall have more to say about this.) They destroyed the hybrid animal-men, separated a well-preserved group of new men, and implanted new genetic material in them by a second artificial mutation.

Palaeoanthropologists are puzzled by the sudden, breathtakingly fast separation of the neanthropids, the group of *Homo sapiens* to which we belong, from the family of prehominids, who were still apelike in form. So far the process has been provisionally explained by a spontaneous mutation.

If we adopt the preanthropological datings marking the

essential changes in our first ancestors for our theory of a planned artificial mutation by unknown intelligences, then the first artificial mutation with the genetic code used by the "gods" must have taken place between 40,000 and 20,000 B.C. And the second artificial mutation would have occurred in more recent times, between 7,000 and 3,500 B.C.

Assuming these datings are correct, the "gods' " first visit would probably have taken place in the age which yielded the first drawings and figurines of women.

Anthropological scholars shy away from datings that go so far back. But surely the time dilation effect, which is unreservedly accepted by science, must have been valid in all ages.

Time dilation is a known quantity for all planned interstellar space travel projects, both now and in the future. The fact that it was governed by a law was first discovered in our own day, but just because it is governed by a law it obviously held good at all times, and would have applied to the "gods" who could have visited the earth in their spaceships traveling just below the speed of light.

Surely the time has come for anthropologists to take this scientifically verified phenomenon into account.

If they did, many of the questions about how our forefathers originated and became intelligent would be answered instantaneously.

No eternities have passed for the "gods" since their visit to earth! If they had paid a visit to our planet thousands of terrestrial years ago, only a few decades would have passed for the crew of the spaceship.

Anyone who accepts time dilation as applying to the visit of the unknown astronauts will understand at once that the same "gods" who developed woman from *Homo sapiens* could also have given Moses the highly technical instructions for building the Ark of the Covenant.

I know that it is difficult to grasp and yet it could be true. I must explain once again that this is not necessarily all speculation. For a long time astronomy has been working successfully with these remarkable time shifts. The only thing that matters now is for archaeologists and pre-anthropologists to accept them, too.

3

A "Sunday" Archaeologist Asks Questions

THE "Sunday" archaeologist has the great advantage of being able to give his imagination free rein and ask the specialists disconcerting questions. Naturally I make the most of this advantage to shake the platform on which many prehistoric findings are built up and which is supposed to be sacrosanct. Amateur investigators are embarrassingly industrious. They are assiduous collectors, readers and travelers because they like to find the best ammunition for their theories in the hope that they will ultimately hit the bull's eye.

The Research Institute for Electroacoustics in Marseilles moved into a new building in the spring of 1964. A few days after the move, several of Professor Vladimir Gavreau's fellow workers began to complain of headaches, nausea and itching. Some of them were so badly affected that they trembled like aspen leaves. In an institute devoted to electroacoustical problems it seemed likely that some uncontrolled radiations in the laboratory were causing the mischief. Using hypersensitive measuring apparatus, the scientists covered the building from top to bottom in an attempt to find out the cause of their colleagues'

unfortunate condition. Find it they did. However, it was not the radiation of uncontrolled electrical frequencies. It was low frequency waves which had escaped through a ventilator and subjected the whole building to subsonic vibrations.

By one of those lucky coincidences which have so often helped research, Professor Gavreau had specialized in the investigation of sound waves for twenty years.

After the incident he said to himself that it ought to be possible to produce experimentally and deliberately what the ventilator had unintentionally achieved. So he and his colleagues built the first sound gun in the world in the Research Institute for Electroacoustics in Marseilles. Sixty-one tubes in a chessboard pattern were fixed to a grille. Then compressed air was steadily blown through them until a note of 196 hertz was given off. The result was devastating. Cracks formed in the walls of the new building; the stomachs and intestines of the laboratory workers began to vibrate painfully. The apparatus had to be switched off at once.

Professor Gavreau wanted to follow up this experiment, but first he had a protective device made for the sound gun's crew. Then he built a genuine "death trumpet" which developed 2,000 watts and sent out sound waves of 37 hertz. This apparatus could not be tested at full strength in Marseilles because it would have sent buildings crashing to the ground over a radius of several miles. At present a "death trumpet" 75 feet long is in the course of construction. It is expected to produce sound waves with the death-dealing frequency of 3.5 hertz.

Quite apart from the frightening vision such a "death trumpet" conjures up for the future, it reminds us of an event in antiquity.

After the chosen people had crossed the River Jordan without getting their feet wet and besieged the town of Jericho with its 21-foot-thick defense walls, the priests

were given complicated instructions about marching round the city and blowing their "trumpets." The event is described in Joshua 6:20 as follows:

> and it came to pass, when the people heard the sound of the trumpet, and the people shouted with a great shout, that the wall fell down flat, so that the people went into the city, every man straight before him, and they took the city.

Neither the full blast of the priestly lungs nor a fanfare of many thousand trumpets could blow down walls 21 feet thick. But we know today that sound waves with deadly low hertz frequencies would have been perfectly capable of bringing down the walls of Jericho.

When Dr. Mottier, an archaeologist at Berne University, and I were taking part in a debate on the Swiss radio, she told me that giants had never existed because there were no fossil finds from which we could infer the existence of such a race.

However, Dr. Louis Burkhalter, former French delegate to the Prehistoric Society, holds a quite different opinion. In 1950, he wrote in the *Revue du Musée de Beyrouth:* "I want to make it clear that the existence of gigantic men in the Acheulian Age must be considered a scientifically proven fact."

Which side is right? At all events, tools of abnormal size have been found that could not have been handled by men of normal stature.

Archaeologists excavated flint implements weighing nearly 8½ pounds near Sasnych, 4 miles from Safita in Syria. The flint tools found at Ain Fritissa, in eastern Morocco, are not to be sneezed at either. They were 12½ inches long, 8½ inches wide, and weighed 9¼ pounds. If we make a calculation based on the normal human stature and constitution, the beings who were able to handle these clumsy implements must have been about 12 feet tall.

Apart from finds of tools, at least three scientifically accepted finds point to the existence of giants in the past: (1) the Java Giant, (2) the South China giant, and (3) the South African (Transvaal) giant.

What race did they represent?

Were they lone wolves?

Were they the wrongly programmed products of mutations?

Were they the direct descendants of gigantic cosmonauts from another world?

Were they especially intelligent beings with advanced technical knowhow who had originated according to the genetic code?

The fossil finds give no conclusive answers to my questions. They are too meager to form the stones for building up a proper genealogy. Will such a family tree ever be systematically investigated in some specially chosen region? Sensational discoveries are reported from time to time, but they nearly always turn out to be chance finds.

But documents—and we ought to take the old sources literally—clearly confirm the former existence of giants. Moses tells us in Genesis 4:4:

"There were giants in the earth in those days; and also after that, when the sons of God came in unto the daughters of men, and they bare children to them, the same became mighty men which were of old, men of renown."

We get a graphic account in Numbers 13:33:

"And there we saw the giants, the sons of Anak, which come of the giants: and we were in our own sight as grasshoppers, and so we were in their sight."

Deuteronomy 3:11, even gives us details that allow us to make rough estimate of their physical stature:

"For only Og king of Bashan remained of the remnant of giants; behold, his bedstead was a bedstead of iron; is it not in Rabbath of the children of Ammon? nine cubits

was the length thereof, and four cubits the breadth of it. . . ."

(The Hebraic cubit is about 1 foot 9 inches!)

But the Pentateuch is not the only part of the Bible that speaks clearly and unequivocally about giants; the later books of the Old Testament also give descriptions of these supermen. Their authors lived at different times and in different places, so they could not have communicated with each other. Nor could the giants, as theologists sometimes claim, have been interpolated into the texts later in order to symbolize evil. If these apologists looked at the texts more closely, they could see that the giants always appear when performing perfectly practical tasks —waging war and single combat, for example—but never when moral concepts or moral behavior are under discussion.

Besides, the documentation of giants is not confined to the Bible. The myths of the Mayas and Incas also recount that the first race created by the "gods" before the Flood was a race of giants. They called two prominent giants Atlan (Atlas) and Theitani (Titan).

Just like our "flying gods," giants haunt the world of sagas, legends and sacred books, but they are never put on the same footing as the gods in any of these sources. One serious handicap kept the giants on the earth; they could not fly. Only when a giant is clearly defined as the offspring of a god is he taken along on a heavenly journey. The giants usually appear as the gods' humble and obedient servants, who carry out their tasks, until they are finally described as stupid brutish creatures and their traces in literature are lost.

A scholar as serious as Professor Denis Saurat, director of the Centre International d'Études Françaises in Nice, has made a serious study of giants. He definitely confirms that they once existed, and even those scholars who raise doubts sooner or later stumble over giants' graves, over

menhirs, those vertical, roughly dressed stone blocks which range up to 65 feet in height; over dolmens, burial chambers built of massive stones, or other megalithic monuments; and last but not least, over the impossibility of explaining technical achievements such as the working and transport of gigantic stone blocks. The number of gigantic architectonic edifices and the number of artistically dressed boulders we can still marvel at today can only be plausibly explained if we assume the primitive erectors of these works to have been giants or beings with techniques unknown to us.

Whenever I stand in front of a prehistoric monument on my travels, I always ask myself whether we ought to be satisfied with the previous explanations of its origin and purpose. Surely we ought to band together and have the courage to find out if novel and fantastic interpretations have any validity.

During my last journey in Peru in 1968, my friend Hans Neuner and I revisited the megalithic buildings above Sacsayhuaman (Falcon Rock), which is situated at a height of 3,450 to 3,780 feet near the limits of the former Inca fortress of Cuzco.

Tape measure and camera in hand, we approached these ruins, which are not ruins at all in the ordinary sense of the word. This is no heap of crumbled stone, remains of some historical building that have become unrecognizable. The rock labyrinth above Sacsayhuaman gives the impression of a superedifice constructed with the last word in technical refinement. Anyone who has spent days in the thin air of this plateau clambering about among stone giants, caves, and rock monstrosities will find it hard to accept the explanation that all this was created ages ago by human hands using damp wooden wedges and crude stone mallets.

Here is only one of the examples we measured: a rectangle 7 feet 1 inch high, 1 foot 2 inches wide, and 2 feet

8 inches deep had been cut out of a granite block 36 feet high and 59 feet wide that appeared to have been torn from the cliff face. A first-class piece of work! There is nothing botched or crude about the way it has been extracted, there is no uneven or clumsy dressing. Even if we are prepared to admit the possibility that extremely skilled stonemasons managed to free the four lateral incisions of the colossus from the rock face after many years of work, we are still left with the riddle of how they freed the rear side of the rectangle. In those days the stonemasons certainly did not have cutting jibs of the kind used today when excavating the stone for underground submarine shelters. And presumably they did not possess the chemical knowledge to free the stone block from the rock face with the help of acids.

Or did they?

We climbed down into some caves in the rock that were 180 to 240 feet deep. As if shaken by some primeval force, the caves' course has been interrupted and they are partially destroyed or telescoped together. Large sections of the ceilings and walls have been preserved. They are so perfect that they could compete with any present-day piece of precast concrete. Nothing has been joined together; there are no parts held together by a binding agent. The whole thing looks as if it had come from one casting mold. The edges are cut at right angles and are knife sharp. Eight-inch-wide granite ledges lie stepwise as neatly as if the wooden mold had been taken away yesterday.

We walked upright through galleries and chambers, waiting tensely for the surprise awaiting us around the next turning. I kept on thinking about the current archaeological explanations of these masterpieces of technology, but they did not convince me. It seems much more likely to me that superlatively built fortifications must have existed here above Sacsayhuaman. All these faultlessly

dressed stone colossi could have formed part of a megalithic building complex. Presumably this layout could be excavated or reconstructed if systematic research were carried out on the site.

Naturally I have also asked myself whether there might not be conventional explanations for the ruins above Sacsayhuaman.

Volcanic eruptions? There have been none for miles around.

Movements of the earth's crust? The last violent movement is supposed to have taken place about 200,000 years ago.

Earthquakes? They could hardly have caused the damage which leaves so much order recognizable among the disorder. To add a double question mark after all the questions, the dressed granite blocks show signs of vitrification of the kind that only appears as the result of tremendously high temperatures.

Freaks of nature? The granite blocks have accurately cut grooves and they have mortises as if they had been torn loose from the block next to them.

Neither the city archaeologist at Cuzco nor his colleagues in the museums of Lima could give me a satisfactory explanation of the structures we had examined. "Pre-Inca," they said, "or perhaps the Tiahuanaco culture."

Of course, there is nothing shameful about admitting one's ignorance. The fact remains that no one knows anything definite about the blocks we saw above Sacsayhuaman. Only one thing is certain. This great complex was built by a method unknown to us by beings unknown to us at an unknown date. It is also certain that it existed and had already been destroyed again before the famous Inca fortress of the Sun God was built.

This applies equally to Tiahuanaco on the Bolivian plateau.

I had studied many books on the subject and learned extraordinary things about Tiahuanaco in the process, but everything in them was surpassed by what I saw with my own eyes. I had also read a lot about the remarkable water conduits that were discovered at Tiahuanaco. During my last journey to the Bolivian plateau I singled them out for special study.

There I stood in Tiahuanaco, 15,000 feet above sea level, for the second time. I had paid too little attention to the water conduits during my first brief visit, but this time I wanted to rectify the omission.

I found the first remarkable example of these half pipes set in the wall of a reconstructed temple. It had been arbitrarily put there. Where it sat in the wall, the half pipe was quite pointless, except perhaps in a decorative sense, as if it were aimed at the tourists.

When I was able to examine the water conduits in other places, I found that what I had read about them was true. They had a completely modern shape with smooth cross sections, polished inner and outer surfaces, and accurate edges. The half pipes have grooves and corresponding protrusions that fit together. They can be joined like children's Lego pieces.

If I was staggered by the technical and mechanical perfection of these works that the archaeologists attribute to pre-Inca tribes, I was absolutely flabbergasted when I saw that the finds long classified as water conduits existed in the form of double pipes. *One* conduit was masterpiece enough, but now there were double pipes made out of one piece of rock. What is more, double pipes with faultlessly executed right-angled sections.

But how can anyone explain the fact that only the upper parts of the pipes have been found?

For the upper parts of water conduits can be dispensed with, but not the lower pipes.

Did these stone pipes serve as water conduits at all?

Perhaps there is a quite different explanation, fanciful though it may seem.

Traditional legends and existing stone drawings tell us that the "gods" met at Tiahuanaco before man was even created. In the language of our space age that means that unknown astronauts constructed their first base on the Bolivian plateau. They had a highly developed technology at their disposal, just as we today use laser beams, vibrating milling tools, and electric apparatus. Looked at from that point of view, is it not more likely that the water conduits were protective pipes for energy cables between individual buildings of the complex?

Beings who were capable of making pipes like those at Tiahuanaco must have possessed outstanding technical skills. Beings with such a high level of intelligence would not have been so stupid as to make water conduits with double pipes when they could simply have bored *a larger hole in the same stone to let double the amount of water pass through* by a very much simpler process and with very much less work. Intelligent beings with such abilities would not have chosen a right-angled shape for the transport of water because they would have known that water and dirt would collect in the corners. And naturally these technicians would also have made the lower sections of piping if it was really needed for the transport of water.

When the Spanish conquistadors asked the natives about the builders of Tiahuanaco in the 1530's, they could give no information about them. They referred the Spaniards to the sagas, according to which Tiahuanaco was the place where the gods had created men. I suspect that the same "gods" also made the pipes and that they did not use them as water conduits.

Archaeologists and anthropologists do their best to give dates to all historical finds. Once a find is dated, it assumes its predestined place in the existing system and, of course, it is given a catalog number.

So far, the C-14 method is the most accurate used by science. When using it, scientists start from the premise that the radioactive isotope of carbon (C), with the atomic weight 14, is present in our atmosphere in constant amounts. This carbon isotope is absorbed by all plants, so that trees, roots, leaves and grasses contain it in amounts that remain the same. But all living organisms absorb vegetable matter in some form or other, so men and animals also contain C-14 in the same proportion. Now radioactive substances have a definite period of disintegration, provided no new radioactive substances are added. This period of disintegration in men and animals begins with death, in plants with harvesting or burning. The carbon isotope C-14 disintegrates at the rate of one half its amount in about 5,600 years. This means that 5,600 years after the death of an organism, only the original amount of C-14 is detectable, after 11,200 years only a quarter, after 22,400 only an eighth, and so on. Since the original amount of C-14 in the atmosphere is known, the C-14 content of fossilized organic matter can be found out by a complicated laboratory process. In relation to the constant C-14 content of the atmosphere, the age of a bone or a piece of charcoal can then be determined.

If grasses and bushes on the edge of a highway are cut and burned, the ashes give a false age of many thousands of years. Why is that? Day after day, the plants have absorbed large amounts of carbon petroleum, but that in turn comes from organic material that stopped absorbing C-14 from the atmosphere millions of years ago. Thus a tree cut down in an industrial district may be only fifty years old according to its annual rings, but examinations by the C-14 method would date the wood ash so far back that the fifty-year-old tree would have had to have been planted in very remote times.

I doubt the accuracy and consequently the dependability of this method. Measurements made so far start

Are the symbols on this stone from Mexico just ornamentation, or are these motifs from a forgotten technological age?

from the firm assumption that the proportion of a C-14 isotope in the atmosphere is and was always the same.

But who knows if that is true?

And what happens if this premise is based on an error? In my book *Chariots of the Gods?* I referred to ancient texts which said that the gods were capable of producing tremendous heat of the kind that only nuclear explosions can generate, and also that they were familiar with radiation weapons. In the *Epic of Gilgamesh* Enkidu dies because he has been smitten by "the poisonous breath of the heavenly beast." The Mahabharata tells us how warriors hurled themselves into the water to wash themselves and their armor because everything was covered "with the death-dealing breath of the gods."

Supposing that in both this case and that of the "explosion" in the Siberian Taiga on the morning of June 30, 1908, what had really taken place was an atomic explosion?

Whenever and wherever—including Hiroshima, and all the nuclear weapon tests on Bikini atoll, in the Soviet Union, the Sahara and China—radioactive substances are released, the balance of the radioactive isotope C-14 must be disturbed. So plants, animals, and men had and have more C-14 in their cells than the amount of C-14 in the atmosphere constantly accepted as a reference figure. This

theory cannot be disputed. If it is accepted, then the so-called exact scientific datings would be called into question. In our theory of visits by unknown astronauts we are dealing with such vast periods of time that small miscalculations can easily creep in and such a small error can very quickly amount to 20,000 years or more.

That is one reason which makes me skeptical about datings that go very far back. Let us take the case of Tiahuanaco. If cosmonauts did leave our planet from there after completing their mission, they certainly did not leave any fossil heirlooms behind for the anthropologists and archaeologists. They had modern equipment and did not use charcoal fires for heating, and they took their bones away with them. In other words, they left absolutely no datable traces behind them. Bones and charcoal remains that are found on the presumed landing places of the astronauts and then analyzed and dated come from men who settled among the ruins of the gods' fortress thousands of years later. I think it is a mistake to assume that the bones that have been excavated came from the builders of Tiahuanaco. I ask new questions because the old answers do not satisfy me.

Archaeology has only existed as a scientific discipline for 200 years. Its representatives scrupulously collect coins, clay tablets, fragments of utensils, shards of vessels, figures, drawings, bones and everything the earth yields up to the spade. They arrange the finds neatly in a system that only has a relative validity for about 3,500 years. Anything that lies farther back remains hidden behind a veil of riddles and suppositions. No one knows and no one can explain what made our ancestors capable of outstanding technical and archaeological achievements. People say a compulsive longing for the "gods," the desire to please the "gods" to carry out the duties imposed on them by the "gods"—all these were the driving forces behind the many wonderful buildings.

Longing for the "gods"?

Which "gods"?

Carrying out duties imposed by "gods"?

Which "gods" imposed the duties?

"Gods" have to perform wonders; they have to be able to do more than other beings. Invented "gods," pure products of the imagination, would not have stayed long

This painting with a heavenly snake, priests sacrificing (?) and strange flying objects comes from a Peruvian ceramic vessel now in Linden Museum, Stuttgart.

in the consciousness of mankind. Men would soon have forgotten them. That is why I hold the view that the "gods" of whom we speak must have been real figures who were so clever and so mighty that they made a deep impression on our ancestors and dominated man's ideological and religious world for many centuries.

Then who was it who manifested himself to the primitive peoples?

We should not be afraid to give fanciful theories a fair hearing. For unfortunately what Heracleitus (*ca.* 500 B.C.) once said still holds good today: "Because it is sometimes so unbelievable the truth escapes becoming known."

There is an area of ruins on the mountainsides of Cajamarquilla, east of the Peruvian capital of Lima. Evidence of our human past to which scholars have not yet paid

enough attention is being destroyed there daily by voracious bulldozers engaged in making roads.

We trudged through this wilderness. We did not need anyone to draw our attention to curiosities, for we literally stumbled into them. In the roads there are hundreds of foxholes, like the ones dug by the Vietcong which we know about from magazines and television. Of course, I cannot assert that these foxholes were once dug to protect the inhabitants from air raids. I dare not say that, because it is a well-known fact that no air raids took place before the twentieth century!

In section the foxholes of Cajamarquilla have a diameter of 23 inches and a depth of 5 feet 7 inches. I counted 209 holes (!) in a single street. They must have served a very important and practical purpose; otherwise, why all the expenditure of effort?

How did the local inhabitants explain the hundreds of holes?

They told me that they had once been grain silos.

This explanation is not very convincing when one examines the holes, which are hollowed out to human size. Naturally such holes could be filled with grain, but surely it would soon begin to germinate or spoil in the damp ground and moist heat? And how was the grain shoveled out of the narrow silos again?

In the absence of grain we filled one of the silos with sand. Then we tried to scoop it out again with our hands and shovels. The upper third did not take much effort, but from the middle downwards the work became exhausting. The last third was sheer torture. With head hanging downward, one leaned into the hole, scooped up a handful of sand, raised oneself up, and put it near the edge. But then we reached a depth when we could no longer lift our hands past our heads without the sand trickling out of them. We soon put our shovels away because the narrowness of the shaft no longer permitted any

leverage. Finally we tied small pails to ropes and lowered them into the depths. If we tried to fill them with the shovels, half the contents tipped out. We tried all kinds of dodges. After working all day and using every device we could think of, we had emptied one silo until only 6 to 8 inches of sand was left. That remnant is probably still there today.

Ever since I was told that the numerous foxholes were grain silos, one question has been bothering me. Why did the peoples of Cajamarquilla take such tremendous pains over the excavation of such narrow holes?

Why didn't they install one big family silo?

As Cajamarquilla was obviously a well-organized urban community, the idea of one large and practical communal silo must have suggested itself.

After investigating on the spot, I am by no means convinced that the time-honored explanation is valid, but, people say, they *must have been* grain silos.

4

Mankind's Storehouse of Memory

WHY is it that we often cannot remember names, addresses, telephone numbers and ideas even when we try our hardest? We sense that what we are looking for is hidden somewhere in the gray cells of our brain and is only waiting to be rediscovered. Where has the memory of something we know perfectly well gone to? Why can we not make use of our store of knowledge as and when we require?

Robert Thompson and James McConnell of Texas spent fifteen years tracking down the secret of memories and their whereabouts. Having carried out all kinds of experiments, they finally made flatworms from the family with the sonorous name *Dugesia dorotocephala* the stars of an experiment that was to lead to fantastic results. These creatures are among the most primitive organisms that possess cerebral substance, but at the same time they have a complicated structure which can be completely regenerated by cell division. If one of these little worms is cut in pieces, each single piece renews itself and becomes a complete and absolutely intact flatworm.

Thompson and McConnell let their starlets crawl about in a plastic trough to which they connected a weak electric circuit. In addition, they installed their desk lamp

with a 60-watt bulb above the trough. As flatworms are very aphotic, or averse to light, they curled up every time the lamp was switched on. After the two scientists had repeated this game of light on, light off for a few hours, the worms no longer took any notice of the constant changes. They had realized that no deadly peril threatened them, that darkness followed light and vice versa. Now Thompson and McConnell combined the light stimulus with a weak electric shock, which affected the creatures a second after the light went on. Whereas the worms had ignored the light stimulus before, now they curled up again when they felt the electric current.

The worms were allowed a break of two hours before they were put on the rack again. Then it turned out that they had not forgotten that they must expect an electric shock after the light came on. They curled up after it was switched on even if the expected shock did not come.

Next, the two patient investigators cut the worms into small pieces and waited for a month until the parts had regenerated to complete worms. Then they were returned to the test trough and the desk lamp was switched on at irregular intervals. Thompson and McConnell made the astounding discovery that not only the heads which had regenerated a new tail, but also the tail pieces which had built up a new brain curled up for fear of the expected electric shock!

Had chemical processes taken place in the cells which had stored the old memories and transmitted the past experiences to the newly formed cells?

That was exactly what had happened. When an unskilled flatworm devours a skilled fellow creature, he takes over the abilities his victim has acquired. Experiments in other laboratories confirmed that if the cells from an animal that had been taught certain skills were inserted into the body of another animal, the same skills

continued to function. For example, rats were taught to press a specially colored key if they wanted to reach their food. When the animals had completely mastered their lesson, they were killed, an extract was taken from their brains and injected into the abdominal cavities of untrained rats. After only a few hours the untrained rats were already using the same colored key. Experiments with goldfish and rabbits confirmed the assumption that learned knowledge can be transmitted from one body to another by the transfer of certain cells.

Today it is an accepted scientific fact that memories are stored in memory molecules and that RNA and DNA molecules establish and transport memory contents. If these investigations were carried a step farther, mankind might be able in the foreseeable future to stop knowledge and memory disappearing when a man dies, and to preserve and transmit the intellectual possessions he has acquired.

Shall we live to see hyperintelligent dolphins, programmed in underwater research, go to diving stations?

Shall we see apes whose brains have been programmed to handle road-making machines working in the streets?

These things may sound ridiculous today, but I think that the man who doubts their practicability is sticking his neck out more than the man who reckons with them as serious possibilities.

As yet there is no scientific proof that unknown intelligences knew how to carry out this kind of memory manipulation in the remote past. Nevertheless, famous scientists such as Shklovsky, Sagan, and others do not exclude the probability that there are living beings on other planets who have advanced far beyond our stage of scientific research.

Once again the Old Testament gives food for thought. It tells of several prophets who were given books to eat by the "gods."

Ezekiel 3:3 recounts such a book feast: "And he said unto me, Son of man, cause thy belly to eat, and fill thy bowels with this roll [of a book] that I give thee. Then did I eat it. . . ."

So it is not surprising that prophets nourished in this way knew more than anyone else and were more intelligent than their contemporaries!

Since the scientific discovery of the DNA double helix, we know that the nucleus of the gene contains all the information necessary for the construction of an organism. Punched cards are so familiar today that to simplify things I should like to call the building plan that is programmed in the nuclei "punched cards governing life."

These punched cards build life according to a very precise time schedule. Let us take our own species as an example. A ten-year-old boy and an eight-year-old girl are obviously adults in miniature, but they do not possess many of the attributes they will have one day as man and woman. Before they have grown up, the cells in their bodies will have divided a trillion times and with each cell division new building stages will be summoned from the punched card. Boys and girls begin to grow rapidly; pubic hair, facial hair and breasts begin to show. The punched cards never make a mistake; their holes determine the course of growing up at exactly the right times.

I should like to emphasize once again that this is a fact that applies to every organism. So on this solid scientific basis I should like to put up for discussion an idea that I personally find quite logical. Why should there not have been a comprehensive building plan for the whole of mankind—as for every individual being—since the remotest times?

Anthropological, archaeological, and ethnological facts embolden me to add my theory to other hypotheses of the origin of mankind. I suspect that in the case of primitive man all the information, *i.e.*, all the orders punched in

the cards, was introduced from outside by a planned artificial mutation.

If we follow my theory back into the dark maze of mankind's prehistory, man is both the son of earth and child of the gods. Tremendous and fantastic consequences result from this dual descent.

Our ancestors experienced their age, the primordial past, directly. They took it into their consciousness and their memory stored up every event. As each new generation came into being a part of this primitive memory was transferred to it. Simultaneously, each generation added new holes to the existing ones in the punched cards. The cards were constantly enriched with new information. Even if some information was lost in the course of time or had stronger impulses superimposed on it, the sum of all information did not decrease. But now man houses not only the punched holes of his *own* memories, but also the programming of the *gods,* who were already traveling in space in Adam's day!

Between our present knowledge and the wealth of these memories there stands a barrier which only a few men manage to break through at fortunate moments. Sensitive men—poets, painters, musicians and scientists—sense the creative stimulation of this primordial memory and often struggle desperately to recapture the stored-up information. The medicine man puts himself into a trance with drugs and monotonous rhythms so that he can break through the barrier to the primitive memory. I also believe that even behind the trendy behavior of the psychedelic pioneers, a primitive instinct is at work that drives them to seek access to the unconscious by using drugs and exacerbating music. But even if the door to a buried world is sometimes opened in individual cases, most people are incapable of communicating to others what they experienced in their exalted state.

For example, Aladdin's lamp is always quoted when

people want to describe a fantastic apparatus or miraculous process. Not only do I take the prophets literally, but also I have gotten into the habit of seeking something real behind the strange, primitive memories of the men of antiquity, something real that many only await (re)discovery by us today.

What was the special thing about Aladdin's lamp? The fact that it could materialize supernatural beings whenever young Aladdin rubbed it. Is it possible that he set a materialization machine going when he rubbed it?

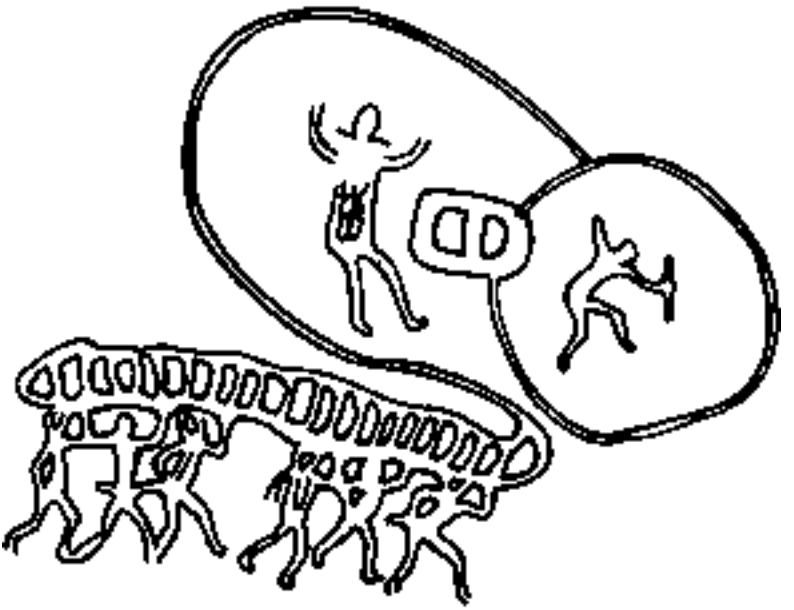
In the light of the present-day knowledge there is a possible explanation of the magic lamp. We know that atomic technology turns mass into energy and that physics turns energy into mass. A television picture is split up into hundreds of thousands of lines that are radiated over relay stations after they have been transformed into waves of energy.

Let us take a leap into the fantastic. A table—including the one I am sitting at now—consists of a countless number of juxtaposed atoms. If it were possible to split the table up into its atomic components, send it out in energy waves and reconstruct it in its original form at a given place, the transport of matter would be solved. Sheer fantasy? I admit that it is today, but in the future?

Perhaps the memory of the men of antiquity was still haunted by the remembrance of materializations that had been seen in very remote times. Today steel is dipped in liquid nitrogen to harden it. To us a natural process that was discovered in modern times. But probably owing to a primitive memory, this hardening process was already a reality in antiquity. At all events, it was practiced with very crude methods. For case hardening, the men of old plunged red-hot swords into the bodies of live prisoners! Yet how did they know that the human body is pumped full of organic nitrogen? How did they know the chemical effect? Simply by experience?

How, I ask, did our ancestors get their advanced technology and their modern medicinal knowledge if not from unknown intelligences?

How do intelligent men and women come to believe that some audacious, way-out idea is empirically arrivable



This mysterious drawing from Tell Issaghen II Sahara is thought by some scholars to show a mummy being transported. The two top figures seem to be floating in space.

at step by step, that what is originally fantasy or vision will one day become reality?

I am firmly convinced that scientists are inspired by the driving desire to know as many things, to turn into reality at least as many memories, as were introduced in the memory of mankind by unknown intelligences in the remote past. For there must be a plausible reason why the cosmos has been the great goal of research throughout human history.

Surely all stages of technical development, every tiny advance and all the visionary ideas were only steps toward the great adventure—the reconquest of space.

Ideas which we still find confusing and disturbing have probably already been turned into reality on our planet at some time in the past.

It was during my study of Teilhard de Chardin (1881–1955), whose books have made a great impact on many people today, that I first came across the concept of cosmic primordial parts. Only later ages will realize what a decisive say this Jesuit has had in forming the twentieth-century world picture with his palaeontological and anthropological researches, in which he wanted to combine Catholic teaching about the creation with the findings of present-day natural science. In 1962, seven years after his death, it was decided, after a violent theological dispute, that Teilhard's views violated Catholic doctrine.

I know of no concept that expresses so clearly what is meant by the cosmic processes. The primordial part of matter is the atom. The atom is also the material primordial part in the cosmos. But there are other primordial parts, for example, time, consciousness and memory. In ways as yet unexplained all these primordial parts are related and connected with one another. Perhaps one day we shall track down other primordial parts, *i.e.*, forces, which cannot be defined or classified either physically, chemically or in other scientific categories. Yet even though they cannot be defined or conceived of materially, they have an effect on the cosmic process. And as far as I am concerned, the frontiers where all research will and must end lie in the cosmos.

I sincerely hope that my observations will set up new signposts leading eventually to convincing results. Two cases which Pauwels and Bergier mention in their book *Breakthrough into the Third Millennium* are directly in line with my conviction that primitive memories await

their discovery in the human consciousness. There is nothing occult or esoteric about either of them. The first concerns the Danish Nobel Prize winner Niels Bohr (1885–1962), who laid the foundations for present-day atomic theory. This world-famous physicist related how the idea of the atom model he had sought for many years occurred to him. He dreamed that he was sitting on a sun of burning gas. Planets rushed past him, hissing and spitting, and all the planets seemed to be connected by fine threads to the sun around which they revolved. Suddenly the gas solidified, sun and planets shriveled up and became motionless. Niels Bohr said that he woke up at this moment. He realized at once that what he had seen in his dream was the atom model. In 1922 he won the Nobel Prize for his dream.

The second case mentioned by Pauwels and Bergier also concerns two natural scientists who figure as both dreamers and men of action. An engineer of the Bell Telephone Company in the United States read reports of the bombing of London in 1940. They upset him badly. One autumn night he dreamed he was drawing the design of an apparatus that could train antiaircraft guns on the previously worked-out path of an aircraft and ensure that their shells would hit the aircraft at a specific point regardless of its speed. The next morning the Bell engineer made a sketch of what he had already drawn in his dream. He finally built a set in which radar was used for the first time. The celebrated American mathematician Norbert Wiener (1894–1964) was in charge of the project for manufacturing it commercially.

I believe that what these two brilliant natural scientists dreamed already rested on the basis of their age-old knowledge. In the beginning there is always an idea, or a dream, that has to be proved in practice. I think it quite likely that one day the molecular geneticists, who already know how the genetic code functions, will also find out

how much—and even which—information was programmed on the punched cards of our life by unknown intelligences. It sounds fantastic, but one fine day we might even discover by which code word a specific piece of knowledge for a specific purpose can be summoned up from the primitive memory.

In my opinion cosmic memories penetrated more and more strongly into our consciousness in the course of man's evolution. They encouraged the birth of new ideas, which had already been realized in practice at the time of the visit by the "gods." At certain fortunate moments the barriers separating us from the primitive memory fall. Then the driving forces brought to light again by the stored-up knowledge become active in us.

Is it only a coincidence that printing and clockmaking, that the car and the airplane, that the laws of gravity and the functioning of the genetic code, were invented and discovered almost simultaneously at different times in different parts of the world?

Is it pure coincidence that the stimulating idea of visits to our planet by unknown intelligences has appeared simultaneously and been put forward in a great many books with completely different argument and sources?

It is, of course, extremely convenient to dismiss ideas as coincidences when there seems to be no cut and dried explanation for them, but that is too easy a way out. Scientists, who have generally tried hard to find rules behind all processes, should be the last people to reject summarily new ideas—however fantastic they may seem at first—as unsuitable for serious research.

Today we know that the plan for the growth and death of every organism is coded in its nucleus. But why should there not be a master plan for the whole of mankind, a great all-embracing punched card on which prehuman and cosmic memories are registered? This premise would explain once and for all why world-shaking ideas, dis-

coveries and inventions suddenly come into existence at some given point in time. The point in time is programmed in the punched card! The selector picks out the storage points in the card and summons up forgotten and subconscious material.

The hectic rush of everyday life leaves us no leisure for getting to know the unconscious. Driven by a constant flood of new and stimulating impressions, our senses never reach the storage points of the primitive memories. So I find it logical that the wonderful sight of memories of the past and a vision of the future appears particularly to monks in their cells, scientists in the seclusion of their laboratories, philosophers in the solitude of nature, and men dying alone.

Since the remote past we have all lived in an evolutionary spiral that carries us irresistibly into the future, into a future which I am convinced has already been the past; not a human past, but the past of the "gods," which is at work in us and will become the present one day. We are still waiting for definite scientific proof. But I *believe* in the power of those chosen spirits to whom a subtle selective mechanism is given that will one day release to them the information stored up in the dim past about realities that have existed. Until that happy day dawns, I support Teilhard de Chardin when he says: "I believe in science, but has science ever taken the trouble to consider the world except from the outside of things?"

5

The Sphere the Ideal Shape for Spacecraft

ALL the types of rocket in service today are pencil-shaped. Is that absolutely necessary? Surely there is constant proof that the pencil shape is neither necessary nor ideal in airless space. When a spaceship, which, unlike the multistage rocket, is at least cone shaped, flies to the nearby moon, it has to revolve repeatedly on its own axis. How involved and dangerous! We know from all the accounts of space flight that every change of course calls for a highly complicated steering maneuver. The ship's computer has to find out deviations from the flight path in thousandths of a second and equally quickly actuate the small steering jets for course correction. A single, minute steering mistake would have devastating consequences, as only limited amounts of propulsive material are carried and they would soon be used up. Then the steering jets would no longer be able to carry out the course corrections, the spacecraft would be unable to return to the earth's atmosphere, and it would shoot through the universe out of control until it burned up.

Undoubtedly the rockets now in use have technically proved themselves. For with the present rocket motors,

which are still comparatively weak, only pointed flying objects offering small frictional surfaces can pierce the thick wall of the earth's atmosphere. Yet sharp needles are not ideal for interstellar traffic. See above!

The liberation of higher propulsive energy is the key that would lead to the manufacture of new types of spacecraft. The time when technology will have as yet incredible energies at its disposal is no longer so far away. When that time comes, it could lead to pure photon propulsion units that reach a velocity close to the speed of light and can provide propulsion for an almost unlimited period.

Then we should no longer have to economize on every pound of payload, as we do today, when for every pound that a spacecraft takes on a journey to the moon, an extra 2,590 pounds of fuel is needed. Once that were the case, spacecraft would soon be built in a very different shape.

Old texts and archaeological finds around the world have convinced me that the first spacecraft that reached the earth many thousands of years ago were spherical, and I am sure that the spacecraft of the future will, once again, be spherical.

I am no rocket designer, but there are a couple of reflections that we can all make and which seem completely convincing. A sphere has no forward or aft, no above or below, no right or left. It offers the same surface in every position and direction. So the sphere is the ideal shape for the cosmos, which also has no above or below, no forward or aft.

Let us take a walk around a space sphere that still seems like a science-fiction dream today. But let's not skimp matters. Imagine a sphere with a diameter of 17,000 feet. This monster stands on sprung, retractable spider legs. Like an ocean liner, the interior is divided into decks of various sizes. Around the belly of the gigantic ball—at its equator—runs a massive ring housing the twenty or more propulsion units that can all be swiveled through 180

degrees—a simple technical feat. When the countdown has reached zero, they will radiate concentrated light waves amplified a millionfold. If the cosmic sphere is to rise from the surface of the planet or one of the launching areas stationed in orbit, the propulsion units shoot their columns of light directly down onto the launching pad, giving the sphere a tremendous thrust. Once the sphere has reached the extragravitational field and is on its course to a fixed star, the propulsion units around its equator will only be fired now and then for course corrections. There is no risk of the sphere moving out of its flight path in a way that might endanger the crew because it can immediately adapt itself to any situation. Besides, something happens that will be very pleasant for the astronauts. The sphere begins to rotate of its own accord. In this way an artificial gravity is created in all the external rooms that decreases the state of weightlessness so much that conditions are almost the same as on earth. If one flies to the stars, one is still bound by one of the laws of the old earth!

It is important to realize that in this kind of space sphere course corrections in any direction are possible without danger. The propulsion units mounted on the steel girdle round the sphere permit lightning-avoiding action or quick turns in any direction. Billiards players will easily catch on to the idea. If a right turn is needed, the sphere gets a light touch from a steering jet mounted on the left and vice versa.

Spherical spacecraft of the kind that may have traversed the galaxies millennia ago will be only minute particles in the infinity of the universe. Shooting along close to the speed of light, the astronauts will only sense this tempo as a slow, soft floating away. Time will seem to stand still in their craft.

But what will happen in the timeless time in the interior of the cosmic sphere? Well, once space stations of

that size actually travel, a perfectly normal everyday routine will be followed on board. Robots will keep a check on the functioning of motors and machinery, computers will watch the course, astronauts will carry out scientific research in laboratories, think out still bolder projects, observe the stars, and think about the exploitation of unknown planets. While the sphere covers millions of miles a minute, days will become weeks, weeks will become months, and months become years for the crew. And in deepfreeze sarcophagi a reserve crew will await its biological reawakening when the sphere nears its goal.

But simultaneously on countless planets whole cultures will disappear, generations will die, and new ones will be born, for time will rush by according to terrestrial laws on our planet and other stars.

I won't expand on the excursion to utopia. Science-fiction writers have described imaginary spaceships of the future only too often. My sphere story is solely intended to prepare the reader's imagination for a perfectly serious idea. Suppose we examine the first legends of mankind's creation with this sphere story in mind.

We learned in school that in the beginning there were only heaven and earth and that the earth was deserted and barren. But out in the darkness, we were taught, shone a light and from this light came the word which gave the order for all life to begin.

Everything about the temporal unfolding of this genesis is absolutely logical. During the long cosmic journey through the universe, there was obviously no light; all was pitch-black night. "There was light" only after the landing of the cosmic vehicle on the planet and then the unknown beings experienced day and night, and life could begin and intelligence originate at the goal of their journey—in answer to a word of command.

In nearly all known creation legends the primordial truth is repeated that the word came from the light. There

was a rich oral tradition on the Polynesian islands long before the first white man landed. A select circle of priests watched carefully to see that not a word of the old philosophical and astronomical wisdom was changed, but Western civilization and Christian missionaries stifled the rich tradition that the original population had possessed. In 1930, the Bishop Museum of Honolulu, which has the largest Polynesian collection in the world, sent two expeditions to the islands. Their aim was to safeguard the genealogies and songs that had survived the dubious blessing of Western colonization. Years later the Swedish scholar Bengt Danielsson, who had crossed the Pacific on the *Kon-Tiki* raft with Thor Heyerdahl, visited some of the South Sea islands with his wife and wrote down the traditions that were still alive in the consciousness of the islanders.

On the little island of Raroia in the Tuamotu group in the Pacific Ocean, 450 nautical miles northeast of Tahiti, Danielsson met an old sage whose name was Te-Yho-a-te-Pange. Danielsson tells us how this priest droned out the history of his people like a gramophone record. It is staggering:

"In the beginning there was only empty space, neither darkness nor light, neither land nor sea, neither sun nor sky. Everything was a big silent void. Untold ages went by. . . ."

Could the account be more pertinent? Do we have to leave it to a primitive man in a loincloth, who lives on coconuts and fish and has absolutely no technical knowledge, to explain to us what it looks like in space? But let Te-Yho-a-te-Pange go on talking:

". . . Then the void began to move and turned into Po. Everything was still dark, very dark, then Po itself began to revolve. . . ."

Have we reached the solar system now, have we entered the field of the orbits of the planets? (The void began to

move.) Darkness still reigned. A sphere—called Po here—became visible. It begins to revolve.

"New strange forces were at work. The night was transformed. . . ."

A telling description. Now the attraction of the planet is at work (new strange forces). We are sinking into the atmosphere. It grows bright as day.

". . . the new matter was like sand, the sand became firm ground that grew upwards. Lastly Papa, the earth mother, revealed herself and spread abroad and became a great country. . . ."

Then people were on terra firma, which extended far and wide. But before they reached the earth's surface, which "grew upwards"—an impression that arises when one comes on it from above—matter that was "like sand" had to be traversed. Is that another way of describing the powerful frictional forces that the envelope of air exerts on the exterior of the spaceship?

Te-Yho-a-te-Pange continues:

". . . there were plants, animals and fish in the water and they multiplied. The only thing that was lacking was man. Then Tangaloa created Tiki, who was our first ancestor. . . ."

We should never forget this myth of the creation. Perhaps it would be a good thing to tell it in our schools.

The *Popol Vuh* contains another wonderful account. This book, which is one of the "great writings of the dawn of mankind" (Cordan) and is in the nature of a secret book, was the holy scripture of the Quiché—Indians of the great Mayan family around Lake Atitlan in the Central American state of Guatemala.

Its comprehensive creation myth claims that men only partially stem from this earth, that "gods" created the "first beings endowed with reason," but destroyed all the unsuccessful examples, and after performing their earthly tasks, rose into heaven again to the place where the

"heaven's heart" is, namely to Dabavil, to him "who sees in the darkness."

Is this the reason why the Quiché Indians were imbued with the concept of gods who dwelt in stone spheres and who could emerge from the stone? Does the ball game cult of this tribe, of which the *Popol Vuh* tells, have its roots in this creation myth? The ball game as cosmical and magical rite, as symbol of the flight to the stars?

Among the creation stories that strengthen my theory, another myth—that of the Chibcha (*i.e.*, men) —is a real jewel. The historical home of these people, whom the Spaniards discovered in 1538, is on the east Colombian plateau.

The Spanish chronicler Pedro Simon describes the myth of the Chibcha in his *Noticias historiales de las conquistasde de tierra firme en las Indias Occidentales:*

> It was night. There was still something of the world. The light was closed up in a big "something house" and came out of it. This "something house" is "Chiminigagua," and it hid the light in it, so that it came out. In the brightness of the light things began to come into being. . . .

I can see that it must have been difficult for translators and interpreters to find a clear-cut equivalent for the word "something house." But how lucky for us that they left this concept that is so hard to understand and did not replace it by a fanciful synonym. Otherwise we might not be able to interpret correctly the significance of this tradition and grasp its full importance. But now we can measure the "something house" against our present knowledge. As the Chibcha had never seen a spacecraft before, they obviously did not know what to call it. So they paraphrased it in words that were familiar to them: Something like a house had landed and the "gods" came out of it.

The traditions of the Incas in Peru say that even before

the world was created a man named Uiracocha existed (*i.e.*, Viracocha, later the god Quetzalcoatl), whose full name Uiracocha Tachayachachic means "Creator of the world things." This god had originally been both man and woman. He settled in Tiahuanaco and created a race of giants there.

Is there perhaps a direct relation between the monolith in Tiahuanaco, the magnificent Gate of the Sun, and the

A stylized drawing of a spherical spaceship on a ceremonial vessel (National Anthropological Museum, Mexico).

traditional story of the creation? And are we too arbitrarily interpreting the saga of the golden egg that came from the cosmos and whose passengers began the creation of men if we take it at its face value, as an authentic account of a spacecraft from unknown stars?

This golden or gleaming egg that fell from heaven is a veritable leitmotiv in mankind's traditional stories of creation.

On Easter Island the gods were worshiped as lords of space. Among them, Makemake is the god of the dwellers in the air. His symbol is the egg!

There are two strange books in Tibet called Kantyua and Tankyua. Actually one cannot really speak of books in their case, for Kantyua alone comprises 108 parchment volumes which number 1,083 books in nine large divisions. "Kantyua" means "the translated word of Buddha" and the sacred texts of Lamaism are collected in it. Kan-

tyua has the same kind of importance as the Koran has for Islam. "Tantyua" means "the translated doctrine" and is a 225-volume commentary on Kantyua. These Chinese printed books take up so much room that they are preserved in the cellars of several villages that lie hidden in the mountain valleys of Tibet. The separate parts of the texts are carved on wooden blocks 3 feet long, 4 to 8 inches thick, and 6 inches wide. Since not more than eight blocks can go on one parchment page, it is understandable that the volumes have to be housed in the cellars of whole villages. Only a hundredth part of these texts, whose original date is not fixed, has been translated. In both these mysterious works there is constant mention of "pearls in the sky" and transparent spheres, in which the gods dwell, to show themselves to men at great intervals. If there were purposeful and coordinated research on Kantyua and Tantyua, we would probably learn a very great deal about the "gods" and their former activities on earth.

In the Indian world the Rigveda is considered to be the oldest book. The Song of Creation that it tells returns once more to that state of weightlessness and soundlessness that reigns in the infinity of the universe. I quote from Paul Frischauer's book *It Is Written:*

> In those days there was neither not-being nor being. Neither the atmosphere nor the sky was above. What flew to and from Where? In whose keeping? What was the unfathomable? . . . In those times there was neither death nor immortality. There was not a sign of day and night. This *one* breathed according to its own law without currents of air. Everything else but this was not present. In the beginning darkness was hidden in darkness . . . The life-powerful that was enclosed by the void, the *one,* was born by the might of its hot urgency . . .
>
> Was there an above, was there a below? . . . Who knows for sure, who can say here whence they originated, whence this creation came?

We should take especial notice of the phrase "the life-powerful . . . was enclosed by the void." As twentieth-century men we can hardly recognize this Song of Creation as anything but an account of a space journey.

But who can explain convincingly why ancient peoples all over the world, who did not know of each other's existence, told stories of the creation with the same basic core?

In the old Chinese classic Tao-te-king there is one of the most beautiful definitions of the origin of the cosmos, life and earth:

> The meaning that one can invent is not the eternal meaning. The name that one can name is not the eternal name. Beyond the nameable lies the beginning of the world. On this side of the nameable lies the birth of creatures.

According to this definition, too, the "beginning of the world" lies outside our spheres; on this side, "this side of the nameable," lies only the "birth of creatures."

Egyptian priests provided the mummified dead in the womb with texts containing instructions for their future behavior on the other side. These books of the dead were very detailed; they contained advice covering every conceivable situation. The directives were meant to lead to reunion with the god Ptah. One of the oldest prayers in an Egyptian Book of the Dead runs:

> O world-egg, hear me.
> I am Horus of millions of years.
> I am lord and master of the throne.
> Freed from evil, I traverse the ages
> and spaces that are endless.

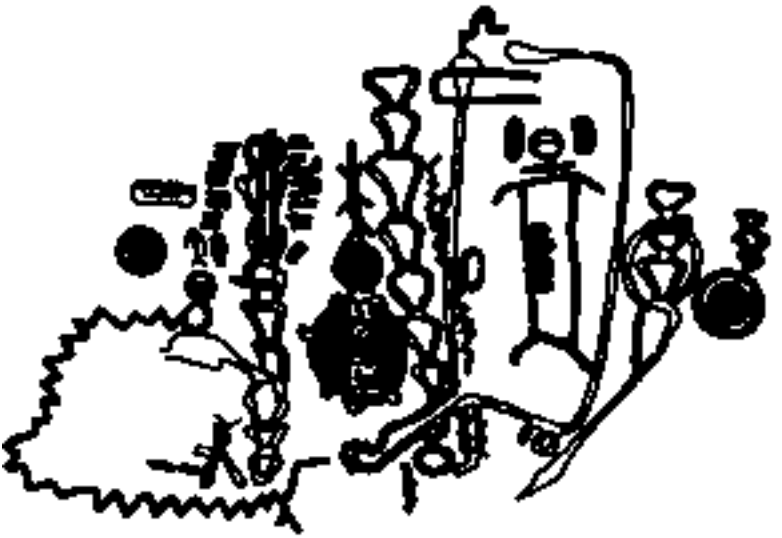
I am always delighted when I can prove textual interpretations with pictures or, better still, tangible works by stonemasons. And circles, spheres and balls can be found in abundance. In the Tassili Mountains in the Algerian

Sahara, figures in strange suits can be seen painted in hundreds of places on the rock face. They wear round helmets with antennae on their heads and seem to be floating weightlessly in space. I should make special mention of the Tassili sphere, which the Frenchman Henri Lhote discovered on the underside of a semicircular rock. In a group of floating couples—a woman is pulling a man behind her—a sphere with four concentric circles is clearly visible. On the upper edge of the sphere a hatch is open and from it a thoroughly modern-looking TV aerial protrudes. From the right half of the sphere stretch two unmistakable hands with outspread fingers. Five floating figures who accompany the sphere wear tight-fitting helmets on their heads, white with red dots and red with white dots. Are they astronauts' helmets?

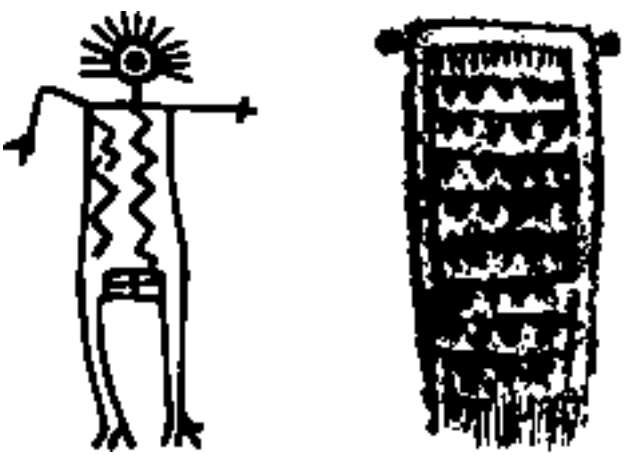
If today we were to give children a box of crayons and ask them to draw the moon flight out of their heads, the result would probably be something quite similar to the Tassili paintings. For the "savages" who painted these memories of the visit of the "gods" on the rock faces were probably at the mental age of a child.

The Tassili sphere is not the only piece of proof I have come across. Anyone who arrives in one of the districts in

Another figure from Val Camonica in Italy. The headgear looks very much like some kind of aerial. A cosmonaut?



So far no one has given a plausible explanation of these complicated rock paintings from Santa Barbara in California. Note the different globular figures.



According to archaeologists, these rock drawings from Inyo County, California, are gods. Is this really convincing? They seem more technical than divine.

the following list should have a film in his camera, for he will be able to photograph spheres and circles galore, and have a good think about their origin. The list is, of course, only a brief selection.

Kivik, Sweden, some 50 miles south of Simrishamn. In the celebrated rock tomb, which has a star in every guidebook, there are large numbers of plain circles and circles divided by a vertical line—all symbols of the gods.

Tanum, Sweden, north of Göteborg. Several wonderful spheres and circles surrounded by rays.

Val Camonica, Italy, near Brescia. About 20,000 prehistoric paintings, including numerous radiating circles and "gods" with helmets.

Detail from an Assyrian cylinder seal. Behind the figure there appears to be a representation of a planetary system.

Fuencaliente, Spain, about 40 miles northeast of Córdoba. Many circles and spheres with and without a crown of rays.

Santa Barbara, California, 50 miles northeast of Los Angeles. Partly interlaced circles with rays.

Inyo County, in eastern California, on China Lake. Rings, stars, spheres, many-colored rays and figures of "gods."

Circles and spheres, apparently strategically distributed, are found in countless places throughout the world.

To sum up: All spheres and circles—whether in creation myths, prehistoric drawings, or later reliefs and paintings—represent "god" or the "godhead." The rays are generally directed earthward. In my opinion, this universal custom should give us something to think about.

I am convinced that the traditional spheres and divine eggs have more than a mere religious and symbolical significance. The time has come to look at these signs from

A ceremonial wood plaque from central Australia now in the National Museum of Victoria. Is it a stylized prehistoric picture of the world or a drawing of a planetary system?

another point of view. The patterns of thought we have followed so far may be absolutely wrong. So far we have lacked the prerequisites to grasp fully the legacy of the "gods" contained in the monuments and documents of our primitive ancestors. But today, when man has already set foot on the moon, he should no longer be satisfied with explanations that were coined in centuries when the theory of life was still firmly established and man was convinced he was the lord of creation!

Ironically enough, I may mention that prehistoric finds were excavated over a distance of 1,200 feet at Carschenna above Thusis in the parish of Sils in the canton of Graubunden, barely twenty miles from my hometown. What has come to light so far? Rock faces and plaques covered with large numbers of spheres, circles, spirals and circles with rays. Why did I have to travel round the world, when the proofs of my theory were right outside my front door?

Spheres surrounded by rays, eggs and flying spheres are not only found on cave walls and cliffs, ancient stone re-

Detail of the flying machine shown on the Assyrian cylinder seal (see illustration, p. 82).

liefs and cylinder seals, but also in the round, made of hard stone, in many different parts of the world—generally scattered indiscriminately and in inhospitable country. In the United States, for example, balls have been found in Tennessee, Arizona, California, and Ohio.

In 1940, Professor Marcel Homet, the archaeologist now living in Stuttgart and author of the well-known book *Sons of the Sun,* discovered a gigantic stone egg 328 feet long and 98 feet high on the upper Rio Branco in North Amazonas, Brazil. On this colossal block, which was called Piedra Pintada, or painted stone, Homet found countless letters, crosses and sun symbols over a surface area of some 700 square yards. He assured me in conversation that there was not the slightest doubt that this magnificent specimen was no freak of nature, but stonemason's work carried out by countless hands over many decades.

But the real archaeological sensation in the ball line awaits its solution in the small Central American state of Costa Rica. There hundreds, if not thousands, of artificial stone balls lie about in the middle of the jungle and on high mountains, in river deltas and on hilltops. Their diameters vary between a few inches and eight feet. The heaviest ball excavated to date weighs eight tons!

I had heard about this sensation, and because of it I spent ten days in Costa Rica, a typical developing country that has so far been shunned by the vast mass of tourists. My journey turned out to be anything but a pleasure trip, but all the hardships were richly rewarded by what I saw.

The first balls I came across were lying around in flat country for no apparent reason. Then I found several groups of balls on the tops of hills. Some always lay in the center of the hill's longitudinal axis. I waded through the mud of a riverbed and found great groups of balls in strange formations that were unintelligible, although they must have been deliberate.

Forty-five balls have been lying in the burning sun of

the white-hot Diquis plain since time immemorial. Have they something to say that we were or are incapable of understanding?

In order to satisfy my curiosity to see and photograph the balls near Piedras Blancas southeast of the River Coto, also in Costa Rica, we had to spend a whole day in a Land Rover to cover a distance of only sixty miles. Time and again, we had to remove obstacles from the track, pull the Land Rover out of ruts, and grind around innumerable bends. Finally our vehicle would take us no farther. Bubu, a half breed, who was guiding us, ran ahead of us for an hour and cleared the way of creatures. Without his precautions we should twice have run into spider webs of a size you simply cannot imagine. The poisonous bite of these loathsome creatures can be fatal.

At last we stood before two enormous balls, both taller than we were, in the midst of the virgin forest. It was precisely because the stones near Piedras Blancas lay deep in the jungle that I had wanted to see them with my own eyes. It is said that these balls are only a few hundred years old. No one who has stood there as I have could believe that. The jungle itself is primeval and I am convinced that the balls must have lain there before the luxuriant vegetation began to thrive.

Today we have managed to transplant Abu Simbel to another site using all kinds of modern machinery, but I doubt whether we could deposit balls like these in a primeval forest.

I saw still more balls in Costa Rica.

Fifteen giant balls lie in a dead straight line in Golfo Dulce.

I found twelve balls near the village of Uvita, north of the Sierra Brunquera.

Four balls have been excavated from the muddy bed of the River Esquina.

There are two balls on Camaronal Island and several

balls on the summit of the Cordillera Brunquera in the neighborhood of the River Diquis.

Most of these mysterious balls are made of granite or lava. There is little chance nowadays of finding out the exact number of stone balls that once existed. Today many fine specimens decorate gardens and parks and public buildings. Since one ancient saga also related that gold could be found in the middle of the balls, many of them have been hacked to bits with hammer and chisel. A strange thing is that there are no quarries for producing the balls anywhere near the sites where they have been found. As in other places any trace that could lead us back to the manufacturers is missing.

During the clearing of woods and swamps at the foot of the Cordillera Brunquera in the Rio Diquis district in 1940 and 1941, the archaeologist Doris Z. Stone discovered several artificial stones. She wrote a detailed account of them that closes with the resigned remark: "The balls of Costa Rica must be numbered among the unsolved megalithic puzzles of the world."

In fact, we do not know who made the stone balls; we do not know what tools were used for the work; we do not know for what purpose the balls were cut out of the granite and we do not know when they were made. Everything that archaeologists say today in explanation of the Indian balls, or sky balls, as the natives call them, is pure speculation. A local legend says that each ball represents the sun —an acceptable interpretation. But the archaeologists reject this version, because in these latitudes the sun has been represented in all ages as a golden orb, wheel or disk, and never as a ball—neither among the Incas, Mayas, nor Aztecs.

One thing is quite certain. The stone balls cannot have originated without mechanical help. They are perfectly executed—absolutely spherical, with smoothly polished surfaces.

Archaeologists who have investigated the balls of Costa Rica confirm that none of them deviates in the slightest from a given diameter. This precision implies that the men who made them had a good knowledge of geometry and possessed the appropriate technical implements.

If the stonemasons had first buried the raw material in the earth and then worked on the protruding section, unevenness and inaccuracies would inevitably have resulted because the distances to the part stuck in the ground could no longer have been checked. This primitive procedure is out of the question. The raw material must have been transported from somewhere because there are no nearby quarries, and that alone must have been very arduous. In addition, the stone blocks must have been broken out or cut out of the rock. My conclusion is that many workers were engaged in the task for a long time and that they possessed tools which made possible such perfect stone dressing.

Even if all this is accepted, it still does not explain why the finished balls were rolled to a particular site, *e.g.*, the top of a mountain. What an absurd idea and what a tremendous expenditure of labor! However, an explanation is given, though it only seems suitable for the most superficial kind of guidebook. The gigantic balls were rolled down riverbeds. I should laugh at such naïveté if the problem involved were not so serious to me. The massive heavy balls would simply have stuck in the muddy, and in parts gravelly, riverbeds.

One irritating fact which cannot have altered in the course of the ages confronts the holders of the riverbed theory. Between the granite mountains in which the material for the majority of the balls must have been quarried and the sites where the balls were found in the Diquis delta, the steaming jungle extends far and wide, and the three small rivers that exist are considerable obstacles to transporting material on such a scale without

deep-loading lorries, cranes, and special freight ships. And as if these barriers were not enough, when seen from the granite cliffs, most of the balls lie on the far side of the Rio Diquis! In other words, the forwarding agents would have had to conjure the material over this barrier, too. I have noticed that whenever archaeologists cannot explain gigantic feats of transport, they have recourse to the so-called rolling theory. But this is pitifully inadequate when one sees the giant balls on the tops of mountains. An expert has told me that at least 24 tons of raw material are needed to make a stone ball weighing 16 tons. In view of the large numbers of balls, one can roughly guess what masses of raw material must have been moved about here in the past.

I had seen the miraculous world of the stone balls and convinced myself of their disturbing existence. Now I wanted to try to find the solution of this puzzle as well, but when I asked the Costa Ricans about the origin and meaning of the stone balls, I met silence and suspicion. Although visited by missionaries and "enlightened" by continuous economic contacts with the West, the natives remained superstitious in their heart of hearts. Two archaeologists whom I questioned in the Museo Nacional of San José explained that the creation of the balls was connected with a star cult, perhaps too with calendar representations, and possibly with religious or magic signs. I needled away patiently because these explanations did not satisfy me, but finally had to realize that the mystery of the balls was taboo to them, for some reason incomprehensible to me.

As the archaeologists could not or would not help any further, I tried asking some of the Indians. Trained by my acquaintance with natives in many countries, I soon sensed that they were afraid of something as soon as the conversation came round to the balls.

Nevertheless, it is extremely surprising that these poor creatures, who haggle over every centimo, would not

guide me to an 1,800-foot-high cliff with three balls on top, no matter how much I offered them. Bubu was an exception.

A German, who has owned the Pension Anna in San José for over forty years, is considered to be the man who possesses the most material about the balls. He pulled out many impressive pictures, but behaved as if he had to keep the secret of some buried treasure. He showed me sketches of formations and groupings of balls, but refused to give their exact location. I was not even allowed to copy his sketches. "No, it's out of the question" was his inevitable reply.

Even if I had not known it beforehand, I should have realized during my stay in Costa Rica that there is a mystery about the stone balls. I could not solve it, but my suspicion increased that the prehistoric balls and all the pictures of them in reliefs and on cave walls are directly linked with the visit of unknown intelligences, of intelligences who landed on our planet in a ball. They already knew and had proved that the sphere is the most suitable shape for interstellar space flights.

One day in the not too distant future, the long journey back to the stars will start from our planet, and probably in spherical spacecraft, because the sphere is the most natural shape for the flight into the universe.

6

The Science Fiction of Yesterday Is Tomorrow's Reality

IN *Chariots of the Gods?* I wrote a chapter in which I predicted a mass exodus of people from our planet to another heavenly body. I thought that this fantastic idea of mine was one way of easing the murderous population explosion, from which there seems to be no escape. In the end I cut this vision of the future out of my manuscript before it went to the printers. I did not want to frighten my readers with such "impossible" ideas. But progress has caught up with me; I should have had more confidence and left it in.

In the interim there have been Russian and American experiments whose ultimate aim is to put this idea into practice, even though it seems like a science-fiction project today. Professor Carl Sagan of Harvard and Professor Dmitri Martinov of the Sternberg Institute in Moscow are both doing research work along the same lines. They want to conquer Venus for mankind—Venus, whose distance from the earth varies between 26,000,000 miles (inferior conjunction) and 160,625,000 miles (superior conjunction).

For research in the laboratory they have at their dis-

posal reconnaissance reports from the Russian Venus sondes and the American Mariner. On June 6, 1969, Tass gave the surface temperature of Venus as varying between 400° and 530° C. This agrees approximately with the 1967 reports of the American Mariner V, which radioed back to its ground station a temperature of 480° C and an atmospheric pressure of 50 to 70. The Russians also received details from the sondes which had made soft landings. According to them, the Venusian atmosphere has a carbon dioxide content of 93 to 97 percent, while nitrogen makes up 2 to 5 percent, and oxygen apparently only accounts for 0.4 percent. At a pressure of barely 1 atmosphere, the measuring apparatus registered a water content of only 4 to 11 milligrams per liter.

These data are valuable working material. On the basis of them both Martinov and Sagan made plans for biologically opening up the morning and evening star. Carl Sagan published his ideas in the scientific periodical *Science,* which has the reputation of only publishing contributions that have been thoroughly examined and have stood up to strict scientific scrutiny.

Sagan thinks that in the near future—he is speaking of a few decades—spaceships with big cargo holds will unload thousands of tons of blue algae into the Venusian atmosphere, *i.e.*, blow them toward the surface of Venus. Blue algae stay alive even at high temperatures, but reduce the high proportion of carbon dioxide by their metabolism. Owing to this steady reduction of carbon dioxide, the surface temperature would gradually fall and finally sink below 100° C. Blue algae would then cause the same chemical reaction as once took place in the primitive soup of our earth. With the help of light and water, carbon dioxide particles could be transformed into oxygen. But once the blue algae had lowered the temperature below 100° C, a rain like the Flood would fall on Venus.

Light, oxygen, and water would then provide the prerequisites for the first primitive life.

Since scientists have already thought of evacuating mankind to another planet, they have also planned protective measures for us sensitive, delicate creatures. In the second phase of their colonization of Venus, chemicals would be sprayed to destroy microorganisms that might be dangerous to the lord of creation.

Only very distant generations will live to see the execution of this gigantic project. For although such plans can be speeded up by modern technological development, we must allow a considerable period of time for the evolution of the new world. At present scientists talk of a thousand years before the first evacuation spaceship can travel to Venus.

Technology pampers us. On July 20, 1969, at 0300 hours, 56 minutes, 20 seconds, Central European Time, hundreds of millions of people saw the two astronauts Neil Alden Armstrong and Edwin E. Aldrin become the first men to set foot on the moon. This was the most magnificent achievement in space travel to date, and it fascinated and astonished humanity all over the globe. But even while man was following the breathtaking flight to the moon, science was already occupied with exploratory flights to Mars and Venus, and even with a vast human migration to earth's sister planet. Just as the conquest of the moon began with unmanned satellites, Venus is now being investigated with unmanned sondes. On May 18, 1969, Moscow reported that after a flight lasting 130 days, the Venus sonde 5 had ended the journey of 156,250,000 miles with a payload of 2,260 pounds. When the sonde was still 31,250 miles from Venus, the ground station radioed the last command. Then the sonde sent down a capsule full of instruments by parachute. Tass stated that the parachute drop lasted 53 minutes.

The distance of Venus from the earth depends on the

distance of its orbit from the earth, and it varies between 26,000,000 and 160,625,000 miles. The Russian sondes do not reach Venus by the shortest route. That sounds paradoxical, but the Russian principle for the flight paths of the Venus sondes is valid for all present-day interplanetary flights. The flight path is calculated according to the minimum quantity of fuel necessary for the transport of the spacecraft. If the sonde were launched on the direct course to Venus, it would have to have an initial velocity of 20 miles per second. In that case vast quantities of fuel would be used not only at launching, but also for braking the initial velocity later on. Consequently, ballistic experts prefer to calculate flight paths that approximate the movement of the earth as far as possible. The most favorable route on these premises is ten times as long as the direct route, but it allows a launching velocity of 7.175 miles per second and a far lower consumption of fuel.

What is there left that is really utopian? Preliminary research becomes applied science at such a breathtaking speed that science-fiction writers have a hard job inventing the unimaginable.

In 1969, Professor Hans Laven, director of the Institute of Genetics at the University of Mainz, published a report according to which millions of insects that are dangerous to men, animals and plants as disease carriers could be killed without the use of insecticides, the chemical agents with which dangerous insects and their brood are destroyed at present. As early as 1967, Laven was able to show the efficacity of his research in the Burmese town of Okpo, which was plagued by midges. Within a few months Okpo was freed of its plague.

Laven had experimented in the laboratories at Mainz for years. In the process he found out that there is a natural incompatibility between midges of different origin. Midges from North Germany showed themselves willing to mate with members of their species from Schwaben,

but the midge offspring produced were not viable. If the midges from different German provinces had an antipathy for each other, then midges from different continents would surely produce offspring that were unviable. So they bred a race from Californian and French midges. When they were released in the town of Okpo, the males of the Mainz bastard race proved to be great lovers and competed successfully with the Burmese males, but the eggs laid by the wives they had mated with did not produce any new midges. The chromosome count of the different species of midge did not tally and genetic destruction took place. The advantage of this way of destroying midges is obvious: The risk of contaminating food and plants by spraying them with insecticides disappears.

Professor Laven is continuing his researches on the basis of the most recent genetic discoveries. He radiates male midges with about 4,000 r X rays. This does not cause the creatures any organic damage, but the chromosome chain between the genes is damaged. The chromosome household is disturbed, the genes are changed and insects develop in an unprogrammed sequence. They are still capable of reproduction, but their offspring are reduced in every way, *i.e.*, in number, size, etc. Of some midge generations treated in this way that continue to hand down their planned disability, Laven said: "There is no cure for semisterility because it is hereditary."

Laven is convinced that in a comparatively short time it will be possible to use his model experiment against other harmful insects; he even thinks that the plagues of rats in many parts of the world can be tackled in this way.

The tremendous possibilities of manipulating the genetic code are no visionary dream. We are dealing with scientific facts. Of course between yesterday and tomorrow lies the abyss that will be crossed. Most probably we shall only rediscover something that has already happened.

One day new knowledge and techniques will create a human organism suited for interstellar flight, one that will not fall sick and will be equal to all the burdens and stresses imposed on it.

Medical science has been performing transplants of organs for more than twenty years, but unproductive and unpleasant sensation mongering about these important scientific operations did not begin until after the first heart transplant. When pieces of skin were transplanted in the 1940's, when bones were changed in 1948, and when a kidney was transplanted in 1950, there was not a murmur. In 1954, the first transplant of a limb onto a dog was successful. In 1955, somebody else's lung was inserted into a man. In 1967, a pancreas was transplanted, and in 1969, doctors risked the transplant of a liver. There were successful transplants of other organs besides these.

It was the heart transplant which first unleashed lively discussions and violent opposition in all the newspapers in the world—probably because there is an unspoken feeling that it fulfills more than the function of a simple pump. Strangely enough, man, who enjoys living and is terrified of death, has not welcomed this advance of medical science with open arms. Yet the prospect of being able to save a man's life by changing a defective organ is an important one. Many teams of surgeons know how to perform the surgical operation. As soon as the threshold of the immune reaction can be lowered without the body's own defenses against infection being endangered, transplants should take place as a matter of course, just like operations for appendicitis. But that is the moment when the supply of spare organs will cause difficulties. So as to be independent of family and religious taboos when vital operations have to be performed, we shall collect human organs for future recipients in organ banks. Today there are blood banks in hospitals all over the world. Why has no one made a fuss about them? For blood is still the sap

Erich von Däniken in front of the Temple of the Inscriptions at Palenque, Mexico. Deep down in the interior of this pyramid is the tombstone of the god Kukulkan at the controls of his rocket.

From time immemorial the idea of being able to float in the air has fascinated mankind—as in this Stone Age cave painting in the Libyan Desert.

The figure in this rock painting from Ti-n-Tazarift in the Tassili Mountains seems to be wearing a close-fitting spacesuit with steering gear on his shoulders and antennae on his protective helmet.

A monument to the space-traveling gods? The most interesting thing on this stele from Santa Lucia Cotzumalhuapa, Guatemala, is the figure at the bottom right. It is dressed like a modern astronaut.

RIGHT: "The Venus of Willendorf" is the flattering name given to this limestone statuette with its faceless round head.

ın or hybrid of man and animal? This sculpture known to archaeologists as the "Man with the Catfish Head."

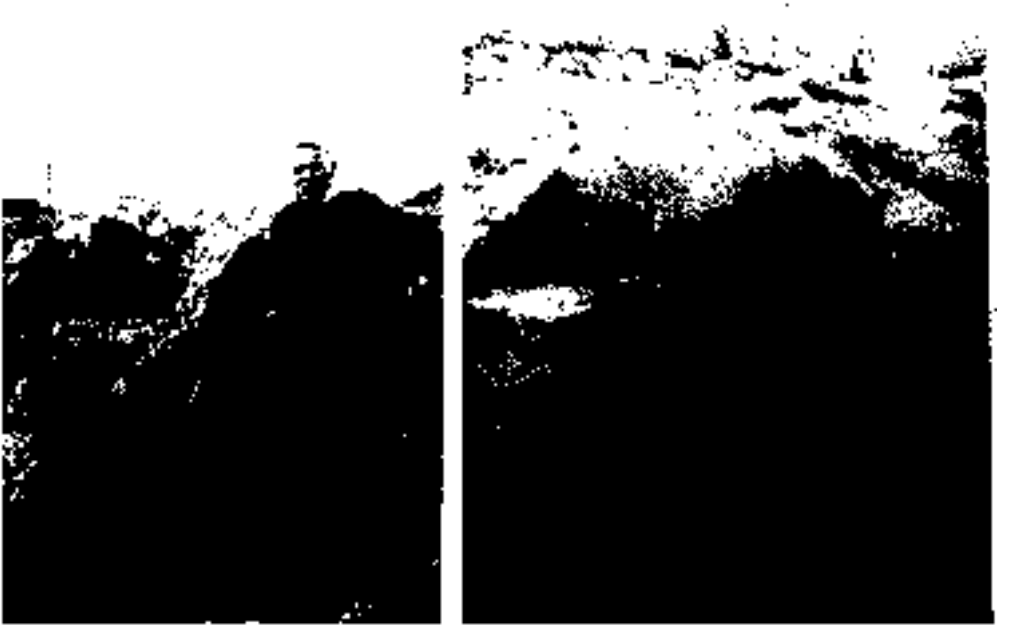
The significance of this female idol with four faces and a solar symbol, found at Lake Maracaibo, Venezuela, is unknown.

A "Sunday" archaeologist on a journey of discovery through Mexico, autumn, 1968.

This fresco from Sehar in the Tassili Mountains shows, right, a figure 10 feet 8 inches high surrounded by so-called men from Mars.

Erich von Däniken measuring the cyclopean walls above Sacsayhuaman, Peru.

This block of stone, the size of a four-s house, has steps made with great accur There is no credible explanation for it



Monoliths that look as if they had been pre-cast like modern concrete. Thrones for giants? Did the "gods" destroy their base at Sacsayhuaman when they had carried out their mission?

The rock seems to have been cut through as if it were butter. Who did it? When? How?

The picture shows the celebrated calendar of Sacsayhuaman. Has this monumental stone structure any relation to the ruins on the surrounding heights?

Erich van Däniken with an Indian on the plateau of Tiahuanaco.

e famous water conduits of Tiahuanaco—
P LEFT) in this case built into a temple
ll of a recent period for no apparent
son. The water conduits have modern
pes with smooth cross sections, polished
ide and outside surfaces, and accurate
ges. But why place two pipes side by side?

The angled section of a water conduit from Tiahuanaco. Protective tubes for energy cables?

What were the clamps that once held this great block of stone together made of?

"The Gate of the Sun" at Tiahuanaco with its imposing frieze of figures.

RIGHT: This massive block of stone has sharp-edged grooves that could not have been made with stone axes or wooden wedges.

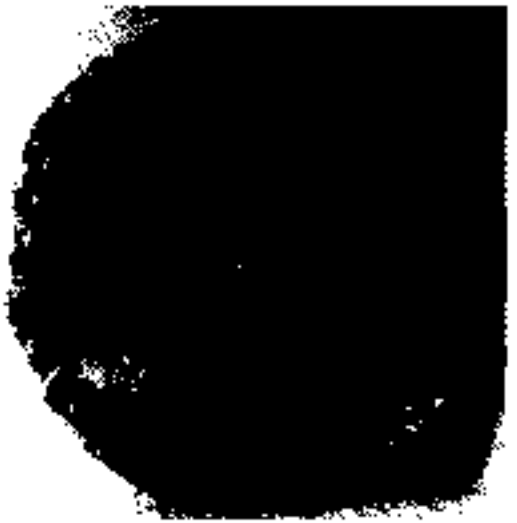
BOTTOM LEFT: This statue from Tiahuanaco, carved out of a single block, stands in La Paz, Bolivia, today. Who made such huge monuments? Are they likenesses of extraterrestrial beings?

BOTTOM RIGHT: Fragment of a Tiahuanaco statue of a quite different kind. Today it, too, is in La Paz, Bolivia.

This man from Auanrhet, Tassili, has antennalike excrescences on arms and thighs. His helmet has slits for eyes, nose and mouth. RIGHT: a naked female figure.

Cajamarquilla near Lima, Peru. Foxholes? Grain silos? There are 209 of them in a straight line. Why holes which everyone was bound to fall into?

Close-up of a hole. Diameter 23 inches, depth 5 feet 7 inches.

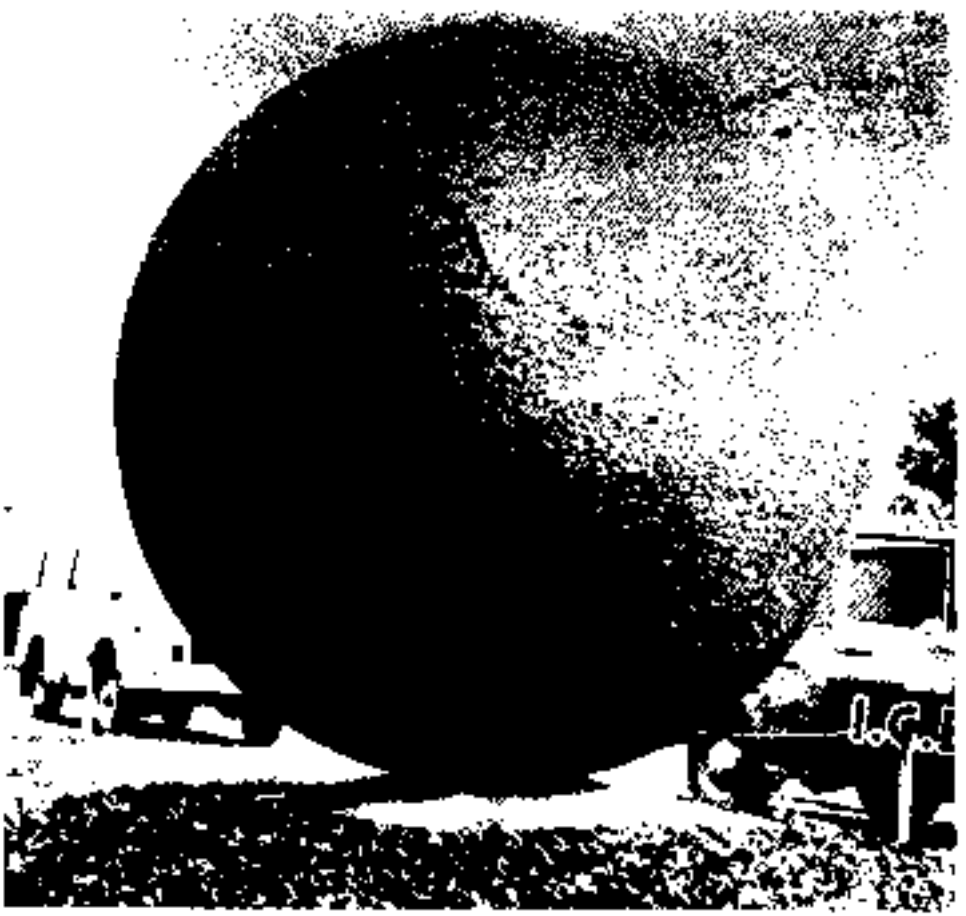


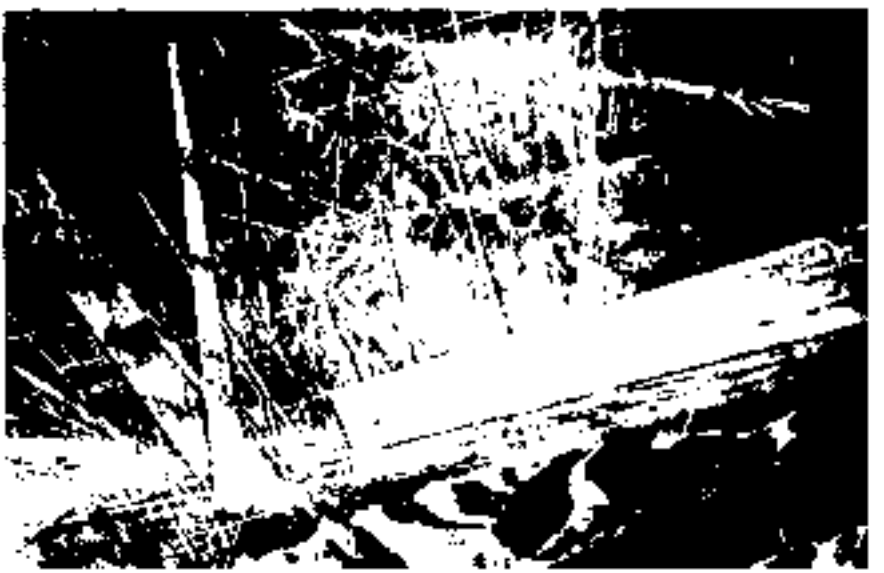
ABOVE: Aztec ceremonial disc of serpentine. Sun god or theologically exaggerated picture of a cosmonaut? RIGHT: Milestone of King Melichkhon with sun, moon and a beautifully carved round body. Earth? Venus? Or a space sphere?

BELOW: Rock painting from Auanrhet, Tassili, about 3,000 years old, with strange figures. The open hatch and the two protrusions on the right of the spherical object raise problems.

Two Assyrian cylinder seals. LEFT: Two creatures, half man, half animal, support a third winged being. A fourth figure appears in an egg-shaped object. ABOVE: The sun, moon and spherical flying objects are again depicted on the upper edge. The object, above left, reminds us of a flying machine.

This stone ball (diameter 7 feet 1 inch) stands outside a building in San José, Costa Rica, as a decoration.





TOP: Gigantic landmark on the solitary bay south of Pisco, Peru. This vast phosphorescent sign, nearly 820 feet high, stares up at the sky.

CENTER: If you fly over the plain of Nazca, it looks like an immense airfield with radiating and converging landing strips. Was it once a space center for the "gods"?

LEFT: This ape, about 260 feet high, is included in a geometrical system of lines drawn with an extreme accuracy that would have been inconceivable without a knowledge of surveying.

RIGHT: These tracks run absolutely parallel and continue up the neighboring mountainside. They link up two plateaux where there are drawings on the ground.

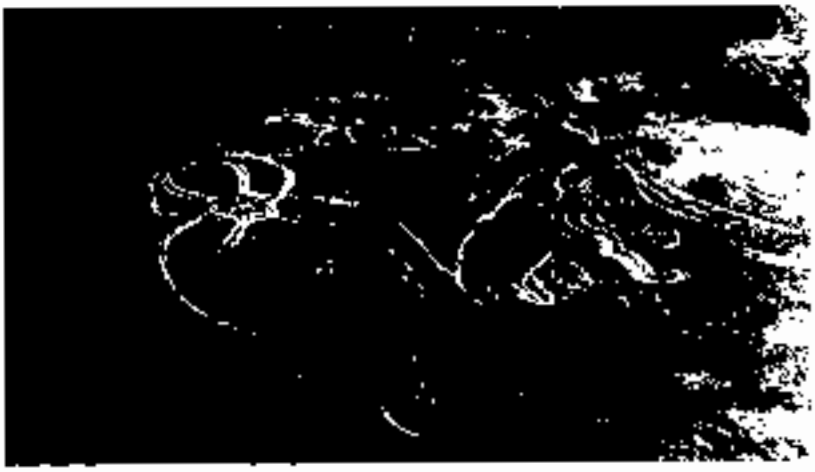
CENTER: Pictures scratched on the hillsides near Nazca show figures several yards high, with radiating crowns, similar to the aureoles in Christian paintings.

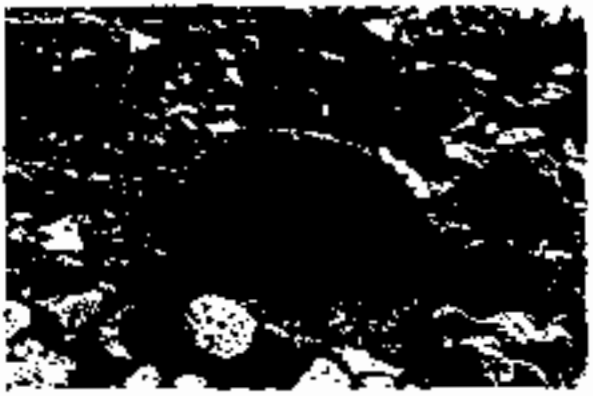
BELOW: Worshiping figures in a rock drawing in Peru. According to Peruvian tradition, the zigzag lines are an attribute of the gods.

tone giants like these line the sandy shores of Easter Island. They were topped with a ound stone hat but these have been thrown down.

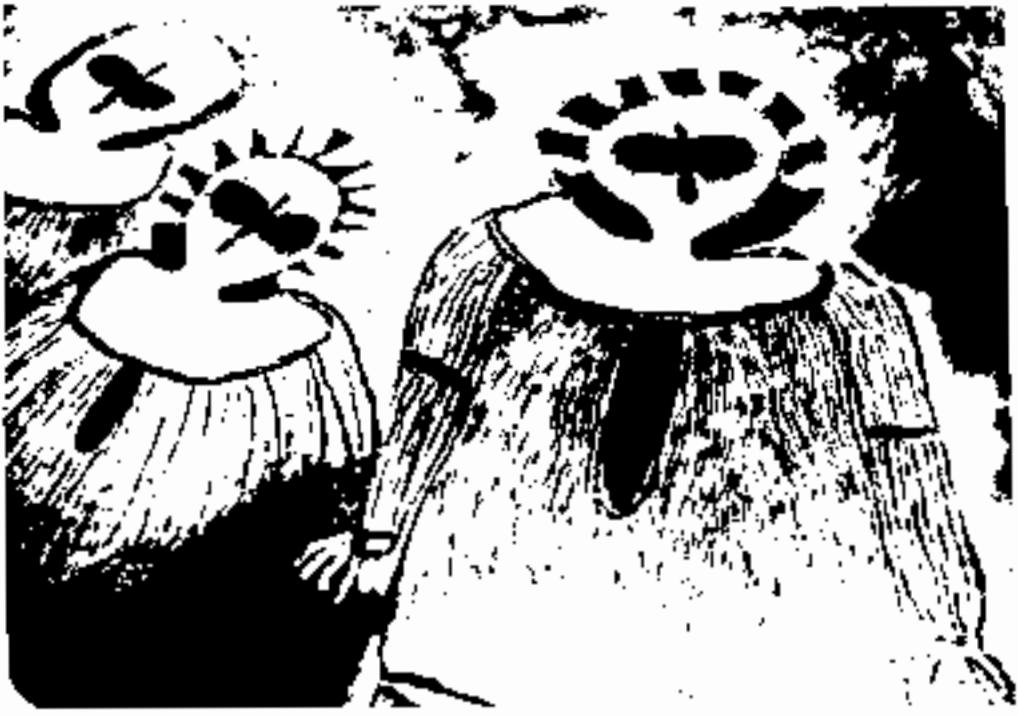
An unfinished statue on the side of the Rano Raraku crater. Is it credible that this enormous figure could have been cut out of the hard volcanic stone with primitive stone tools?

The whole rock face is a jigsaw puzzle of uncompleted giant statues. Today two thirds of their height is below ground.





ABOVE: The meaning and origin of this petroglyph are obscure. In the foreground a strange figure, half fish, half man, with a star symbol. LEFT: The egg of the gods crumbles away on the beach of Easter Island. Once a temple dedicated to the gods stood here. BELOW: This rock painting from the Central Kimberley district of Australia represents Vondjina, the mouthless mythical being of pre-history. As the personification of the Milky Way, Vondjina was the object of special reverence and given precedence over other gods.



of life and far more mysterious than the heart pump. Of course, blood is voluntarily donated. Why should not this ultimately be true of organs, given by men who know that they are going to die or by their relatives?

I believe that organ transplants, too, are only a transitional stage. If scientists eventually succeed in programming the DNA double helix in the nucleus with information for the construction or reconstruction of organs, the Frankenstein methods will soon be forgotten. The Russian scientist L. V. Poleschayev is already able to make a damaged scalp regenerate itself independently, and he has even managed to make amputated limbs start to grow again. One day there will be gene surgery as well. Sheer fantasy? I do not think so because I know that Dr. Teh Ping Lin of San Francisco succeeded in giving a mouse's egg an injection as early as 1966. A mouse's egg is only one tenth the size of a red corpuscle and cannot be seen at all with the naked eye!

Professor E. H. Graul, director of the Institute for Radiobiology and the Medical Use of Isotopes at Philips University in Marburg, and the cyberneticist Dr. Herbert W. Franke gave a forecast of medicine and its fringe areas in the years 1985 and 2000 in the *Deutschen Ärzteblatt:*

Forecast for the year 1985:

Mastery of transplanting animal and human organs, elimination of immune reactions.

Routine use of artificially made organs and/or biological systems (artificial organs made of plastics and/or electronic components—on cyborg lines).

Marked progress in the gerontological and geriatric field. The average expectation of life is about eighty-five years.

The aging process will be manipulated advantageously, the degeneration inherent in old age will be slowed down, both physically and psychically.

The first positive conclusions about the production of primitive forms of artificial life.

Biomedical electronics will influence practical medicine (for example, electronic artificial limbs, radar for the blind, limbs with servomechanisms and many other things).

Forecast for the year 2000:

Deepfreezing of men for hours or days.

Determination of a child's sex before birth.

Possibilities of transplanting all organs.

The correction of hereditary defects.

Continuous genetic manipulation of animals and plants.

Production of artificial forms of primitive life.

Use of X-ray and gamma-type laser beams.

General biochemical immunization against diseases.

General diffusion of the cyborg technique (artificial organs).

Manipulation of organisms by electric stimulation of the brain.

The center of this rock drawing from Toro Muerto, Peru, looks like an X-ray plate of the thorax. Its meaning is unknown.

Drugs for the control of man's emotional states, chemical aids for the improvement of memory and the ability to learn.

I suggest that unknown intelligences were able to do all these things in the dim mists of time.

I suggest that the "gods" left this knowledge behind when they visited earth.

I suggest that discoveries, which still lie ahead of us in the broad field of research, have been stored in the human memory since time immemorial and are only waiting to be summoned up again.

The experiments of David E. Bressler of the University of Los Angeles and Morton Edward Bittermans of Bryn Mawr College in Pennsylvania are a step along this road. They implanted additional brain cells into fish. The fish enriched with the transplanted brain substance soon proved to be much more intelligent than their untreated fellows. Cleveland Clinic in Ohio is conducting a series of experiments in which monkeys' brains are put into dogs.

Why did the Mayan priests tear the beating hearts out of their prisoners' breasts?

Why were cannibals convinced that they took over the strength and intelligence of their dead enemies when they ate them?

Why does a myth from remote antiquity claim the body only belongs to man temporarily and that he must give it back to his master at any time?

Ought we to suspect that the human sacrifices practiced for millennia were more than esoteric religious observances? Were they distorted memories of transplants, operations, cell regenerations, that were handed down for thousands of years in a terrifyingly garbled form?

Let us examine another possibility. The thinking computer will also be useful to man in the peaceful conquest of the universe. However startling its calculating achieve-

Why did Mayan priests tear the hearts out of the living bodies of their victims? Was it perhaps the memory of a misunderstood technique of operating used by the "gods"?

ments may seem today, the supplying of information by the electronic wonder is still in its infancy.

About two hundred years ago, the brilliant mathematician Leonhard Euler calculated the constant pi for the area of a circle to 600 decimal places. This fabulous achievement took him several years. One of the first computers spat out the constant pi worked out to 2,000 decimal places in a few seconds. As a routine task, a modern computer gives the constant pi to 100,000 decimal places in a nanosecond = 1 billionth of a second.

Today the brain of a computer, its central core, operates with about one million information units. In computer jargon they are called bits. The human brain works

in a very similar fashion. Molecular memory units and nerve switches store and process information. The child in the cradle already stores it—even if unconsciously. Throughout our life we store information so that we can call on it when needed. Only too often we have to admit that our brain does not operate very reliably with the hoarded knowledge.

The central core of a computer works with a precision of a quite different order. Our brain works with more than 15 billion switches, whereas a large modern computer uses only 10,000,000. Further elements can be set up between the switches by cross connections. Then why does a computer work so much more reliably than our brain? Because generally nine tenths of our brain lies fallow, but the computer always has all its bits present.

Even today the superiority of the computer is shame making. If our brain is to work at its maximum, we have to concentrate on a specific problem. But the computer can solve millions of different problems at the same time.

The fastest calculator in use in Europe today is in the Institute for Plasma Physics at Garching, near Munich. It carries out 16,600,000 calculating operations per second. In the machine's electronic stomach 750,000 transistors are connected with each other by the shortest way by means of photolithographically produced plugboard diagrams. The electromagnetic waves that make the connections move with the speed of light. Computer people talk of access times of $1\frac{1}{2}$ nanoseconds as mere routine. In $1\frac{1}{2}$ nanoseconds a light ray covers 1 foot 6 inches.

But when we learn that the newest computer of the Data Control Corporation performs 36,000,000 calculating operations a second, then the fastest machine in Europe is already a rather antiquated model. In comparison, one of the General Electric models, the GE-235, can be called a home computer. It only solves 165,000 problems

a second, but you do not have to buy it. Its services can be hired for 4 cents per second.

The ferrite storage unit of a modern computer houses 200,000 digits in a space of one square meter. Magnetic tape storage units swallow up 10,000,000 bits of data. And computers of all kinds are first-class pupils. They check themselves and never make the same mistake twice.

Today computers still need interpreters who translate our language, figures, and concepts into the various computer languages. Direct conversation with the uncanny creature is expected by 1980. In America, but even more so in England, which is far advanced in computer techniques, they are trying to dissolve human speech into symbolic groups that the computer understands. This is the direction in which all computer manufacturers are working. But for IBM, the biggest producer of computers, language is far too slow a means of communication between man and machine. They are looking for another medium of transmitting information.

I have said that computer technology is only at the beginning of the great possibilities that lie ahead of it. Future research has an eerie goal: the biotronic storage unit. Nucleic acids appear to possess magnetic properties. Should this assumption prove to be correct, they would be the smallest information carriers of all. If these investigations reached their goal, the processing unit of a computer, which still takes up a lot of room, would be reduced to the size of the human brain. Biotronic information units would only be as big as chain molecules. I think that this line of research will ultimately succeed, but I am afraid that biotronic calculators would be susceptible to infection by viruses and bacteria.

Interstellar space travel operates with distances of hundreds of millions of miles. At the speeds that are to be expected, the computer will be more than a mere ready reckoner. Even if computer manufacturers today resist

the claim that computers will be able to think and act independently one fine day, that day will come. Then computers will steer spaceships between the planets on their own.

Far be it for me to assert that our ancestors knew anything about computers, integrated or electronic measuring apparatus. But since I am convinced that extraterrestrial intelligences visited the earth, their spacecraft must have operated with suitable instruments. And since we men are programmed by the "gods," we shall soon be masters of the same technological miracles.

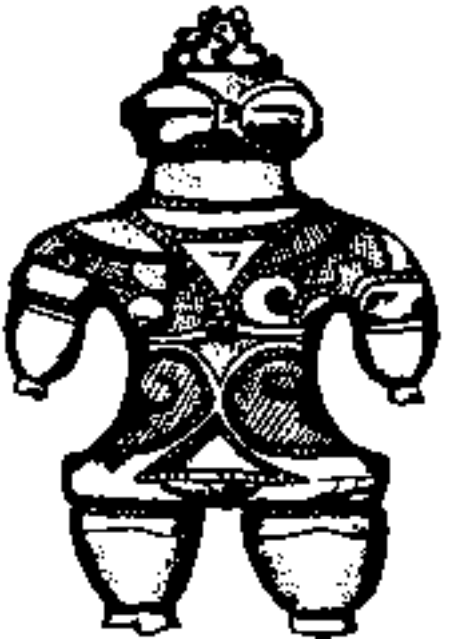
7

Conversations in Moscow

ON Saturday, May 18, 1968, Alexander Kassanzev, the famous Soviet writer, put the three sculptures which had impressed me so profoundly carefully back into the glass case opposite the window in his Moscow flat. They were old Japanese statues cast in bronze, and they seemed to be dressed in spacesuits. The largest of the statues was nearly 2 feet high and had a diameter of about 5 inches. Tight-fitting bands ran from the shoulders, crossed the chest, and joined up again between the thighs at the height of the buttocks. A broad belt with rivets on it was round the hips. The whole suit down to the knees was fitted with pocket-like protrusions. The helmet was tightly bound to the trunk with pads and bands. Comical-looking hollows appeared to be openings for built-in breathing or listening apparatus. I noticed two more openings on the lower half of the head.

But the most fascinating thing about the figures was undoubtedly the large glasses with lenses set at an angle. I could not see any weapons, unless the short staff in the gloved left hand could be called a weapon. "A mini-laser beam," the author of a science-fiction novel might say.

Agog with curiosity, I asked Kassanzev where these figures came from and who had given them to him.



No one can say when snow goggles like these were worn in Japan. Did the sculptor carve the image of a space traveler whom he had seen?

He chuckled into his beard: "A Japanese colleague gave them to me before the war, in the spring of 1939. The figures were found during excavations on the island of Hondo in Japan. They are dated too long before our era. The figures have striking, indeed unmistakable, space-traveler characteristics, but no one can say how or why Japanese artists dressed their figurines in such suits. But one thing seems to be clear. Neither 'snow goggles' nor lenses of this kind were known in ancient Japan."

Then Alexander Kassanzev got into his decrepit old car and drove me through the splendid broad streets of Moscow to the Sternberg Institute of Moscow University, where he had arranged for me to meet Professor Josef

This is another very old Japanese statue. Both show markings which could be straps and fixing points for equipment.

Samuilovich Shklovsky, the director of the Radio Astronomy Department.

What an experience it was, this Institute at Universitetsprospekt 13! It hummed like a beehive, teemed like an ant colony. The students' desks and tables stood higgledy-piggledy wherever there was room. Empty tin cans served as ashtrays. On the walls there were gigantic astronomical maps, and in front of them, students arguing. In one corner students struggled over a mathematical formula, in the opposite one others were busy with a complicated measuring apparatus. You felt instinctively that research was carried on here as teamwork.

The door to Professor Shklovsky's workroom was ajar. The room itself had the strange mixed smell of books, files and dust peculiar to rooms—as I have often noticed—in which the old is preserved and the new critically tested.

Professor Shklovsky rose from behind his massive desk, which was covered with printed papers and manuscripts, and greeted me with a suspicious laugh: "So you're the Swiss!"

It sounded like a rebuke, as if the gaunt old man really meant: "So you're the man who upsets the subjects of that quiet, peaceful country with your shocking theories." As a result, our conversation, carried on in English, began with a certain amount of reserve. Calmly, deliberately, often looking for the right word, the famous man—and he knows that he is famous—explained his Martian moon theory. He thinks that the two moons of our neighboring planet are artificial satellites. While he explained his arguments in his favor of this theory, he would repeat in all modesty that it was only his private opinion.

After lunch in the crowded canteen, Professor Shklovsky relaxed his suspicious attitude a little. We began a lively argument about the impossible possibilities in the cosmos. In the end I had the satisfaction of realizing that this leading expert of the Eastern world, too, does not exclude the possibility of a visit in the past by unknown intelligences from the cosmos. He suspects that there are planets with intelligent life within a radius of a hundred light years.

"But what about the distances, Professor? How will the incalculable distances between the stars be bridged?"

Shklovsky answered unhesitatingly: "Obviously there is no cut and dried answer to that. Automatons or cybernetically controlled stations are not subject, as you know, to the calendar of 'normal' years. So what is there to stop a robot making a thousand-year journey undamaged? After all, some of the satellites sent on their travels by us

will still be functioning when we have long been in our graves."

That is the opinion of a scientist who is an expert on the subject. It points to the technical possibility of bridging unimaginable distances. However, it still does not explain how and by what means intelligences could survive such periods of time.

My helpful friend Alexander Kassanzev was waiting for me in his old car. He had been talking to the students. The institute is like home to him. Now he wanted to take me to the Pushkin Museum, which houses magnificent collections of Assyrian, Persian, Greek, and Roman art. En route we spoke about a fascinating piece of Chinese research which would have made a great impression on our archaeologists. As we drove along Prouzenskaya Quay, Kassanzev told me many details of the latest conclusions Chinese scholars had reached and I spoke the key words into my portable tape recorder. When we stopped at traffic lights, as we did at Zoubovski Boulevard, I spelled out names and places clearly. The story I took home on tape was so exciting that it richly repaid the expense and efforts of the journey.

Kassanzev mostly talked about the remarkable finds in the Chinese mountains of Baian Kara Ula. His story sounded like a fairy tale.

This is Kassanzev's story: "It was in 1938 that the Chinese archaeologist Chi Pu Tei discovered graves arranged in rows in the mountain caves of Baian Kara Ula in the Sino-Tibetan border district. He found small skeletons of beings with delicate frames, who nevertheless had rather large skulls. On the walls of the caves he discovered rock drawings which portrayed beings with round helmets. The stars, sun, and moon were also scratched on the rock and connected by groups of pea-sized dots. Chi Pu Tei and his assistants managed—and this is the sensational thing about the find—to salvage seven hundred and six-

teen granite plates, which were two centimeters thick and looked very like our long-playing records. These stone plates had a hole in the middle from which a double-grooved incised script ran out spirally to the edge of the plate.

"Chinese archaeologists knew that the Dropa and K ham [Sikang] tribes had once lived in this deserted region. And anthropologists said of these mountain tribes that they had been of small stature, with an average height of only 5 feet 3 inches. . . ."

"And how did they get the big skulls?"

"It was that part of the discovery that upset all previous anthropological classifications. Scholars could not place the high, broad skulls on the tiny skeletons of the Dropa and Kham. Not with the best will in the world. When Chi Pu Tei published his theory in 1940, he met with nothing but scorn. He claimed that the Dropas and Khams must have been an extinct species of mountain ape."

"Then how did the stone plates originate? Are the apes supposed to have made them?"

"Of course not. In Chi Pu Tei's view they were placed in the caves by people from a later culture. On the face of it his theory did seem rather ridiculous. Who ever heard of rows of graves made by apes?"

"What happened next? Were the finds filed away in the archives of unexplained anthropologico-archaeological cases and forgotten?"

"Very nearly! For twenty years several clever men racked their brains to solve the riddle of the stone plates. Not until 1962 was Professor Tsum Um Nui of the Acadamy of Prehistoric Research in Peking able to decipher parts of the incised script."

"What did they say?"

Kassanzev became serious: "The story that was deciphered was so hair-raising that at first the Academy for

Prehistoric Research forbade Tsum Um Ni to publish his work at all."

"And that was that?"

"Tsum Um Nui is a stubborn fellow; he went on working doggedly. He could prove without any doubt that the incised script was not just a bad practical joke by some authority on prehistoric writing. For even serious scholars often show a sense of humor. Think of Piltdown man. In cooperation with geologists he showed that the stone plates had a high cobalt and metal content. Physicists found out that all seven hundred and sixteen plates had a high vibration rhythm, which led to the conclusion that they had been exposed to very high voltages at some time."

Kassanzev turned off from Kropotkinskaya Quay and drove to the curb of Volkhonka Street. The car stopped outside the Pushkin Museum. I was so entranced by his story that I wanted to hear the rest of it standing on the pavement, but Kassanzev took me by the arm and led me into the museum. We sat on a bench between tall glass cases.

"Please go on!"

"Tsum Um Nui now had four scientists who supported his theory. In 1963, he decided to publish it in spite of the Academy's doubts. I have heard that his publication was known to you in the West, but was not taken seriously. Over here, too, only a few courageous scholars took any notice of the stone-plate theory. Very recently our philologist Dr. Vyatcheslav Saizev published extracts from the stone-plate story in the periodical *Sputnik*. The whole story is preserved in the Peking Academy and the historical archives of Taipeh in Formosa."

"What is so explosive and shocking about the stone-plate story?"

"The story is only upsetting and bizarre to people who are unwilling to face things that may throw new light on our origin. The stone-plate story says that twelve thousand

years ago, reckoned from today, a group of their people had crashed onto the third planet of this system. Their aircraft—that is an exact translation of the groove hieroglyphs—had no longer had enough power to leave this world again. They had been destroyed in the remote and inaccessible mountains. There had been no means and materials for building new aircraft."

"Is all that written on the stone plates?"

"Yes, and then we are told that these beings who had crashed onto the earth had tried to make friends with the inhabitants of the mountains, but had been hunted down and killed. The story ends almost literally: 'Men, women, and children hid themselves in the caves until sunset. Then they believed the sign and saw that the others had come with peaceful intentions this time. . . .' That's more or less how it ends."

"Is there anything else that corroborates the contents of the stone-plate story?"

"There are the graves in rows, the rock drawings, and the plates themselves. And there are also the Chinese sagas which precisely in the Baian Kara Ula region tell of small spindly yellow beings who came down from the clouds. The myth goes on to say that the alien creatures were shunned by the Dropas because of their ugliness, indeed that they were killed by the men in "the quick way."

"Kassanzev, why isn't this fascinating story discussed all over the world? Is it really well enough known?"

My companion laughed, put his hand on my arm and said with mild resignation: "Here in Moscow the story *is* known, you only need to keep your ears open. But the story contains too many facts which cannot be slotted straight into the painfully constructed chronology of archaeology and anthropology. Authorities who attach importance to their reputation in the scientific world would have to abandon a great deal of their own theories if they were to take serious notice of Baian Kara Ula. Surely it is

very human to take the easy way out. To keep silent or laugh discreetly and condescendingly? When recognized scientists stick together and smile or say nothing, the boldest man looses enthusiasm in a subject that is too hot to handle."

I am still too young to be able to resign myself. I believe in the disturbing power of ideas that cannot be hushed up.

8

Ancient Sites That Deserve Investigation

WHEN I was in Peru in 1965, the closest view of the 820-foot-high three-armed trident on the cliffside in the Bay of Pisco was from a mile out at sea. On our journey in 1968, Hans Neuner and I planned to go ashore, free at least part of an arm from the sand, and take photographs.

After an unsuccessful attempt to reach the three-armed trident by land in a rented car that kept on bogging down in the sand dunes, we persuaded a fisherman to take us into the bay. For a good two hours we swung along in a light breeze until the fisherman explained that he could go no nearer the coast because his boat would be in danger of being ripped apart by the sharp underwater reefs.

So we had no choice but to get into the water and wade and swim the remaining fifty yards to the shore with all our clothes on, including our shoes—because of the stinging fish. We pushed our tools, measuring tapes and cameras ahead of us, wrapped in plastic containers. When we reached the first coastal cliffs, we took off our wet things and tramped through the hot sand to the cliff face.

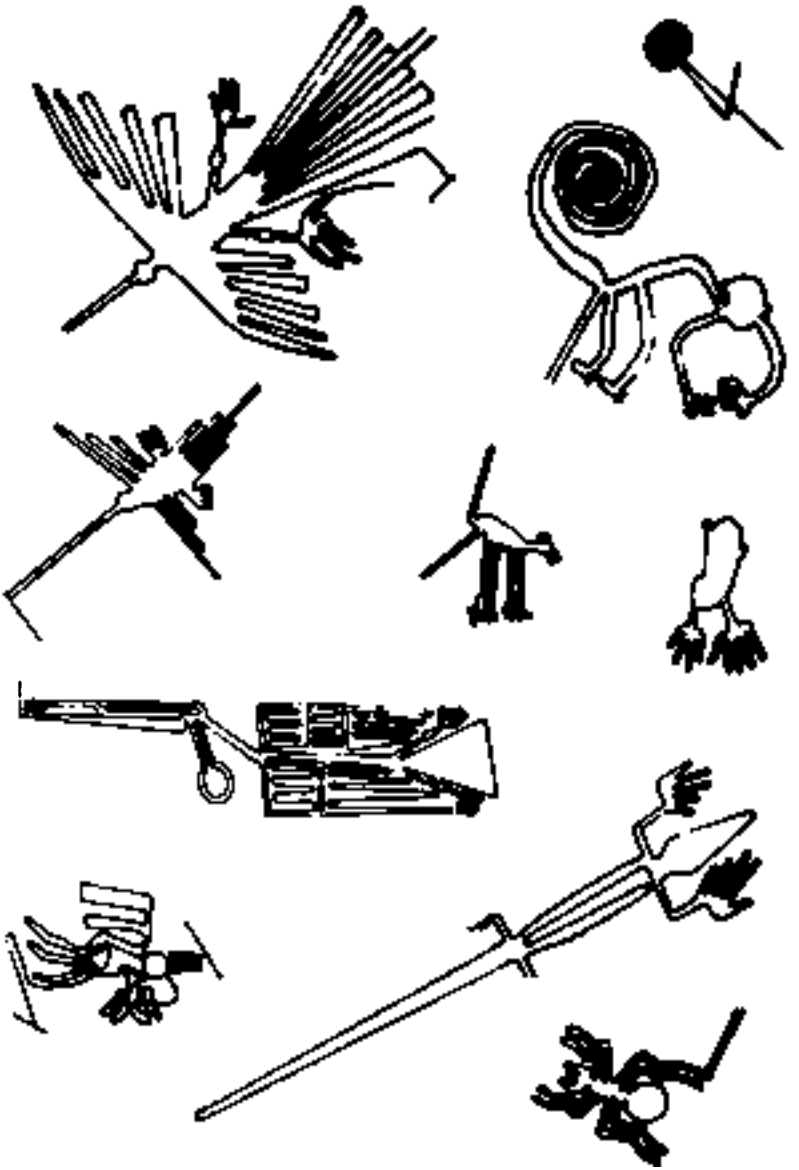
Unfortunately well-disposed gods do not lend supernatural powers to curious idealists. After a few hours of

hard work we had to admit that it was beyond our powers to free even a single bit of the trident from the hard layer of sand.

Nevertheless, we took some accurate measurements that were worth our while. The individual arms of the trident are about 12 feet 6 inches wide. They consist of snow-white phosphorescent blocks that are as hard as granite. Before they were covered with sand, *i.e.*, as long as the early inhabitants kept them clean, these dazzling, brilliant signals to the "gods" must have shouted to heaven.

There are some archaeologists who think that the trident on the cliffs of the Bay of Pisco was a landmark intended for shipping. The fact that the trident lies in a bay and cannot be seen from all sides by passing ships is against this theory. Another argument against it is that a landmark of this size would have been excessively large for coastal shipping, and the existence of deep-sea shipping in remote antiquity is doubtful, to say the least. But the main thing against it is that the makers constructed their trident facing heavenward. We might also ask why, if navigational marks were needed for some kind of shipping, the ancients did not make use of the two islands which lie far out at sea on the line of an extension of the central arm of the trident. They provided natural aids to orientation which would have been visible from afar to any ship regardless of the direction from which it approached the bay. So why a navigational mark that seafarers coming from either north or south could not see at all? And why one that points heavenward? I may mention in passing—to clinch matters—that apart from a sandy desert, there is absolutely nothing that could have attracted seafarers and that the waters with their sharp reefs must have been an unsuitable anchorage even in prehistoric times.

Another fact supports my theory about this signal that faces heavenward. Only 100 miles as the crow flies lies



This sketch by Maria Reiche clarifies the relative size of the stylized figures on the pampa of Nazca. The biggest figure (not shown here) is about 300 yards long.

the plain of Nazca with its mysterious ground markings, which were only discovered in the 1930's. Since then, archaeologists have been racking their brains over the geometrical system of lines, animal drawings and neatly arranged bits of stone which extend over an area some 30 miles long between Palpa in the north and Nazca in the south. To me, they look just like an airport layout.

Anyone who flies over the plain can see the lines shining up at him clearly—even from a great height they are perfectly recognizable. They stretch for miles, sometimes running parallel to each other, sometimes intersecting or joining up to form trapezoids with sides as long as 850 yards. Between these dead, straight tracks it is possible to make out the outlines of enormous animal figures, the largest of which in its great extension measures some 275 yards.

Seen at close quarters, the lines turn out to be deep furrows which expose the yellowish-white subsoil of the pampa and stand out clearly from the crustlike upper layer of brown desert sand. Maria Reiche, who has been working on the preservation, measurement, and interpretation of the drawings since 1946 and was the first person to prepare field sketches with measuring tape and sextant of the triangles, rectangles, straight lines, and numerous animal figures, found out later why the ground above the Ingenio valley was more suitable than any other for making clearly recognizable markings that would survive the centuries. The reason was that it only rains for an average of twenty minutes a year in the Nazca region. Otherwise a dry, hot climate prevails. Weathering is done by the sand-bearing wind which also carries away all loose material lying on the surface, leaving behind only pebbles which continually break up owing to the great differences in temperature. Moreover, the so-called desert varnish, which has a brown glint after oxidization, has formed on them. In order to make the gigantic drawings show up,

the constructors only had to remove the dark surface stones and scratch up the light subsoil of fine alluvial material.

But who made the pictures, and why did they make them so big that one can only get an overall impression of them from a great height, for example, from an aircraft?

Did they already possess a highly developed system of surveying by means of which they transferred their small-scale plans to a gigantic scale with absolute accuracy?

Maria Reiche says: "The designers, who could only have recognized the perfection of their own creations from the air, must have previously planned and drawn them on a smaller scale. How they were then able to put each line in its right place and alignment over large distances is a puzzle that will take us many years to solve."

So far, scholars have taken far too little notice of the phenomena on the pampa of Nazca. At first they thought that the dead, straight lines were old Inca roads or irrigation channels. Both explanations are nonsensical! Why should roads begin in the middle of a plain and then suddenly come to a stop? If the lines were roads, why should they intersect in a system of coordinates? And why are they laid out toward points of the compass when the purpose of roads is to reach earthly goals by the shortest possible route? And why should irrigation canals be in the form of birds, spiders, and snakes?

Maria Reiche, who has worked the longest and most extensively on solving the secret of the Nazca plain and has written about it in her book *Secret of the Desert,* published in 1968, rejects these interpretations. She thinks it much more likely that the drawings are connected with the calendar, besides having a religious meaning. In her view the ground markings are observations of the heavens meant to be handed down to posterity in an indestructible form. However, she makes the following reservation: "It is not absolutely certain if it is possible to interpret all the

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Maria Reiche says: "The designers, who could only have recognized the perfection of their own creations from the air, must have previously planned and drawn them on a smaller scale. How they were then able to put each line in its right place and alignment over large distances is a puzzle that will take us many years to solve."

So far, scholars have taken far too little notice of the phenomena on the pampa of Nazca. At first they thought that the dead, straight lines were old Inca roads or irrigation channels. Both explanations are nonsensicall Why should roads begin in the middle of a plain and then suddenly come to a stop? If the lines were roads, why should they intersect in a system of coordinates? And why are they laid out toward points of the compass when the purpose of roads is to reach earthly goals by the shortest possible route? And why should irrigation canals be in the form of birds, spiders, and snakes?

Maria Reiche, who has worked the longest and most extensively on solving the secret of the Nazca plain and has written about it in her book *Secret of the Desert,* published in 1968, rejects these interpretations. She thinks it much more likely that the drawings are connected with the calendar, besides having a religious meaning. In her view the ground markings are observations of the heavens meant to be handed down to posterity in an indestructible form. However, she makes the following reservation: "It is not absolutely certain if it is possible to interpret all the

lines astronomically, for there are some (including many north-south lines) which could not have corresponded to any star appearing on the horizon during the period in question. But if it was intended to draw the position of constellations not only on but also above the horizon, there would be so many possible explanations of the lines that it would be extremely difficult to prove any of them."

I know that Maria Reiche does not share my interpretation of the geometrical drawings at Nazca because the results of her investigations to date do not justify such daring conclusions. In spite of that I should like to be allowed to expound my theory.

At some time in the past, unknown intelligences landed on the uninhabited plain near the present-day town of Nazca and built an improvised airfield for their spacecraft which were to operate in the vicinity of the earth. They laid down two runways on the ideal terrain. Or did they mark the landing strips with a raw material unknown to us? As on other occasions, the cosmonauts carried out their mission and returned to their own planet.

But the pre-Inca tribes, who had observed these beings at work and been tremendously impressed by them, longed passionately for the return of these "gods." They waited for years and when their wish was not fulfilled, they began to make new lines on the plain, just as they had seen the "gods" make them. That is how the extensions of the first two landing strips originated.

Yet still the "gods" did not appear. What had gone wrong? How had they annoyed the "heavenly ones?" A priest remembered that the "gods" had come from the stars and advised them to lay the enticing lines out according to the stars. The work began again and the tracks laid out according to the constellations came into being.

But the "gods" still stayed away.

In the interim, generations were born and died. The original, genuine strips made by the unknown cosmonauts

had long fallen into ruin. The Indian tribes who came after only knew of the "gods" who had once come down from heaven by oral accounts. The priests turned the factual accounts into sacred traditions and made the people constantly build new signs for the "gods" so that they might return one day.

As this kind of linear conjuring was unsuccessful, they began to scratch large animal figures in the ground. At first they drew all kinds of birds that were supposed to symbolize flight, but later their imagination suggested outlines of spiders, apes and fish.

Admittedly that is a hypothetical explanation of the pictures at Nazca, but surely something like it could have happened. I have seen—and anyone else can see, too—that the animal symbols and the coordinates of the landing strips are only recognizable from a great height.

But that is not all. In the vicinity of Nazca, on the rock faces, are drawings of men with rays shooting out of their heads, rather like the gloriole in paintings of Christ.

Nazca is a hundred miles as the crow flies from Pisco. Suddenly I had a brain wave. Was there some connection between the trident in the Bay of Pisco, the figures on the plain of Nazca, and the ruins on the plateau of Tiahuanaco? Apart from a very slight deviation, they are joined by a straight line drawn on the map. But if the plain of Nazca was a landing ground and the trident at Pisco a landing signal, then there would have to be landmarks south of Nazca too, because one can hardly imagine that all the astronauts flew in from the north, *i.e.*, from Pisco.

And in fact, large markings, whose meaning and purpose have not yet been explained, were found on high rock faces near the south Peruvian town of Mollendo, 250 miles as the crow flies from Nazca, and others continue into the deserts and mountains of the Chilean province of Antofagasta. In many places right angles, arrows, and ladders with curved rungs can be identified, or one sees

whole hillsides covered with rectangles partly filled in ornamentally. All the way along the map line, steep rock faces exhibit circles with rays directed inward and ovals filled in with a chessboard pattern, while on the inaccessible hillside in the desert of Tarapacár there is a gigantic robot.

On August 26, 1968, the Chilean newspaper *El Mercurio* wrote about its discovery (a little less than 500 miles south of Nazca) under the headline NEW ARCHAEOLOGICAL DISCOVERIES BY AERIAL PHOTOGRAPHY:

> A group of experts have succeeded in making a new archaeological discovery from the air. When they were flying over the desert of Tarapacár, which lies in the extreme north of Chile, they discovered the stylized figure of a man drawn in the sand. This figure is about 330 feet high, and its outline is marked with stones of volcanic origin. It is on a solitary hill about 650 feet high . . . Scientific circles are of the opinion that aerial searches of this kind are of great importance for the investigation of prehistory.

According to the members of the expedition the robot is about 330 feet high. His body is rectangular, like a chest, his legs are straight and on the thin neck sits a square head from which twelve straight antennae of equal length stick up. From hip to thigh triangular fins like the stubby wings of supersonic fighters are attached to the body on both sides.

We owe this discovery to Lautaro Nuñez of the University of the North in Chile, General Eduardo Jensen, and the American Delbert Trou, who observed the ground formations closely during a flight over the desert. This genuinely sensational find was fully confirmed during a second reconnaissance flight by the director of the Archaeological Museum of Antofagasta, Mrs. Guacolda Boisset.

On the heights of Pintados, she discovered and confirmed with aerial photographs a series of other stylized figures over a distance of three miles.

In the summer of 1968, the government newspaper *El Arauco,* Santiago, Chile, wrote: "Chile needs the help of someone to satisfy our chronic curiosity, for neither Gey nor Domeyko [archaeologists] has ever said anything about the platform of El Enladrillado, of which some people say that it was laid out artificially and others that it is the work of beings from another planet."

Details about the discoveries on the plateau of El Enladrillado were made known in August, 1968. The rock-strewn plateau is about 2 miles long and at the place undestroyed by the passage of time about 870 yards wide. This terrain looks rather like an amphitheater. If its builders were men, they must have possessed the legendary superhuman strength. The stone blocks that have been moved here are rectangular, 12 to 16 feet high and 20 to 30 feet long. If giants lived here, they must still have been exceptionally big. Judging by the stone chairs, their shinbones must have been 13 feet long. No fantasy is rich enough to imagine what kind of mortals could have assembled these blocks to form an amphitheater. The newspaper *La Mañana* of Talca, Chile, asked: "Could this place have been a landing ground [for gods]? Undoubtedly it could." What more can one want?

The plateau of El Enladrillado can only be reached on horseback. You ride for three hours from the little village of Orto Alto de Viches to the rewarding goal at a height of 1,378 feet. The volcanic blocks that are found there in large numbers have such a smooth surface that they could only have resulted from very careful dressing. A partially interrupted landing strip, about 1,000 yards long and 65 yards wide, is also clearly recognizable on this plateau. In the neighborhood scholars have found and still find pre-

historic tools with which—presumably—the 233 geometrically shaped stone blocks, each weighing 20,000 pounds, were supposed to have been dressed.

In a story dated August 25, 1968, the newspaper *Concepción,* El Sur, Chile, calls the plateau of El Enladrillado "a mysterious place." The site is indeed mysterious—as all sites with prehistoric traditions still are today. One's gaze turns westward over vast abysses, above which condors and eagles circle and behind which volcanoes soar up like dumb sentinels. Over towards the western hills there is a 300-foot-deep natural cave in which traces of work done by human hands are still discernible. At present scholars toy with the idea that Stone Age men excavated a vein of obsidian—a glasslike formation of various recent lava deposits—in order to leave behind a sample of their industrial abilities in the form of tools containing metal. I cannot quite go along with this. Stone Age men would hardly have had tools containing metal. I think that the present theory cannot be correct.

During archaeological and geological investigations, scholars found a fallen monolith, which even on its side rose 6 feet from the ground. When they had turned it over with great effort, they found several faces on the other side. A puzzle worthy of inclusion in the forest of questions surrounding Easter Island.

One other remarkable find deserves to be mentioned. In the middle of the plateau stand three boulders with a diameter of 3 feet to 4 feet 6 inches. When taking measurements at the beginning of last year, it was discovered that two of these boulders are in accurate compass line from north to south. With a minimal deviation the line that runs from the first two boulders to the third cuts the horizon at the point where the sun is at its zenith in summer. Here again we must ask whether an extinct race left behind traces of astonishing astronomical knowledge or whether our ancestors were working on a higher task.

Such exact evidence of the past cannot be just brushed off as coincidence.

In *El Mercurio,* Santiago, Chile, on August 26, 1968, the leader of the scientific expedition, Humberto Sarnataro Bounaud, supported the point of view that an ancient unknown culture must have been at work here because natives of the region would never have been capable of such an achievement. But, said Bounaud, somebody already knew that the plateau would make a first-class landing ground for all kinds of flying bodies. That would explain the 233 symmetrically arranged stone blocks which could have been visual signs directed skyward.

Bounaud also writes: "Or the explanation may quite simply be that unknown beings used this place for their own ends."

I have gone into the most recent finds on the plateau of El Enladrillado in such detail for two reasons. Firstly, because they are only known in Europe to a comparatively small circle of specialists and, secondly, because they fit so splendidly into my theory that the markings in the Bay of Pisco were the beginning of a straight line along which landing grounds for the cosmonauts were laid out right up to the far north of Chile.

We should always bear in mind that although the creators of ancient cultures have disappeared, the traces they left behind still question and challenge us. To find the correct answers to their questions, to meet their challenge, archaeological research institutes should receive adequate funds from their governments, but perhaps also from an international organization so that they can systematize and intensify their investigations. It is right and necessary for the industrial nations to invest millions of pounds in research for the future, but should research into our past be treated as the Cinderella of the present for that reason? The day may come when the nations begin an archaeological research race that they all keep a strict

military secret. Then a situation will arise of the kind we experienced with the first landing on the moon, but the race that begins then will not be a question of prestige so much as a matter of cashing in.

In this connection I should like to mention a number of sites where intensive modern research could probably decipher many riddles of our past in a way that would benefit technology.

The remains of a human settlement whose C-14 dating gave an age of 29,600 years were found on the island of Santa Rosa, California.

Twelve miles south of the Spanish town of Ronda, in a solitary mountain valley, lies the cave of La Pileta. It can be proved that men lived in this cave from 30,000 to 6000 B.C. The cave walls are covered with strange, stylized signs that are not just senseless scribbles, for they are executed in a masterly fashion and are often repeated. They might be a kind of writing.

In the mountains of Ennedi in the southern Sahara, Peter Fuchs found rock engravings of four female figures of a kind found nowhere else in Africa. The bodies of the figures wear clothes and exhibit tattoos similar to those found in the South Pacific. Yet the distance between the southern Sahara and the Pacific islands is 15,625 miles as the crow flies!

So-called meanders have long been known from many cave drawings in Africa and Europe. They are drawings of mazes and so far no one knows what to make of them. But now these labyrinth symbols have also been found on South American cave walls, especially in the Territorio Nacional de Santa Cruz and the Territorio de Neuguen, Argentine. Was there an exchange of ideas between the artists who created them? How else can the repetition of the same symbols be explained?

The Argentinian scholar Juan Moricz has shown that the language of the Magyars was spoken in the ancient

kingdom of Quito even before the Spanish conquest. He found the same family names, the same place names and identical burial customs. When the ancient Magyars buried a dead man, they said farewell to him with the words: "He will disappear into the constellation of the Great Bear." And in the South American valleys of Quinche and Cochasqui there are burial mounds which are faithful reproductions of the seven main stars of Ursa Major.

A stone $7\frac{1}{2}$ feet high and 33 feet in circumference has been lying since prehistoric times on a small hill between Abancay and the River Apurimac, Peru, on the stretch Cuzco-Macchu Picchu. This Piedra de Saihuite bears reliefs which show wonderful terraces, temples and whole blocks of houses, as well as strange drains and writing that is still undeciphered. Similar reliefs in this area are known by the names Rumihuasi and Intihuasi. Rumihuasi exhibits a model of a temple with a niche 4 feet 7 inches high.

In February, 1967, the well-known *National Geographic* magazine, in the United States, published a story about the small tribe of the Ainus, who live on the Japanese island of Hokkaido. The Ainus still claim today with complete conviction that they are the direct descendants of "gods" who came from the cosmos, and they repeat it in their myths.

Apollo is pictured flying over the sea on a vase which is kept in the Vatican and dates to the sixth century B.C. Apollo is sitting, playing the lyre, on a kind of shell with three long legs. The construction is drawn through the air by three massive eagles' wings.

In the park-cum-museum of Villahermosa, Tabasco, Mexico, stands a neatly carved monolith on which a snake, or rather a dragon, taking up three sides of the colossus is depicted. Inside the animal sits a man with bent back and raised extended legs. The soles of his feet

are working pedals, his left hand rests on a gear lever, his right hand carries a small box. The head is enveloped in a close-fitting helmet that covers brow, ears and chin, leaving only the face free. Directly in front of his lips is an apparatus that can be identified as a microphone. Clothing and helmet of the sitting figure fit tightly together.

On a broad copper chisel, sharpened on one side, that was found in the Royal Cemetery at Ur, one can make out, reading from top to bottom: five balls, a small box like a loudspeaker, two absolutely modern rockets, which lie next to each other and emit rays at the rear, several dragonlike figures and a pretty accurate copy of the Gemini capsule. The artist who made the engravings more than 5,500 years ago must have had an enviable imagination!

Señor Gerardo Niemann (Hacienda Casa Grande, Trujillo, Peru) has two remarkable clay vessels in his private collection. One vessel is 8½ inches high and represents a kind of space capsule on which motor and exhaust are as clearly recognizable as on the relief of the rocket-driving god Kukulkan at Palenque. A doglike animal with gaping jaws crouches on the capsule. The second clay vessel shows a man who is using the index fingers of both hands to operate a kind of calculating machine, or switchboard. This vessel is 1 foot 4 inches high. Both artifacts were found in Chicama Valley on the north coast of Peru.

No, we are not at the end, we are only at the beginning of the great discoveries pointing out of the past into the future.

9

Easter Island: An Inexhaustible Topic

THE remains of unknown great cultures lie on nearly all the inhabitable South Sea islands. Survivals of a completely inexplicable yet obviously very advanced technology mysteriously stare the visitor in the face and literally entice him to speculate and theorize.

Particularly on Easter Island.

We spent ten days on this tiny speck of volcanic rock in the South Pacific. The days are over when this island was only visited once every six months by a Chilean warship. We were taken there by a four-engined Lan Chile Constellation. There are no hotels there yet, so we spent the whole time in a tent. We had previously stocked up with provisions, which are scarce on the island. Twice the natives invited us to supper. We had baked salmon which they put in a hole in the earth and covered with glowing charcoal and many different kinds of leaves that form part of the secret recipes of the Rapanui housewives. We had to wait nearly two hours before the smoldering food was taken out. As a gourmet I must admit that finally palate and tongue were offered a feast that was really delicious, a pleasure that was on a par with the feast for the ears provided by the Rapanui islanders singing their folklore.

The horse is still the means of transport on the island—except for one car, which belongs to the twenty-six-year-

old mayor, Ropo, who is of medium height and chubby faced, and was elected democratically by his fellow countrymen. Ropo is the uncrowned king of the island, although there are a governor and a police commissioner as well. Ropo comes from an old, established family and probably knows much more about Easter Island and its unsolved puzzles than all the other islanders put together. He and two of his assistants offered to act as our guides.

The language of the Rapanui is rich in vowels: *ti-ta-pe-pe-tu-ti-lo-mu.* I do not speak it, so we conversed in a mixture of Spanish and English. When that failed, we tried to make ourselves understood with hands, feet and grimaces that must have been extremely funny to outsiders.

There are many accounts of the history of Easter Island and just as many theories about it. After my ten days' researches I naturally cannot say *what* took place here in the remote past, but I believe I found some arguments to show what *cannot* have taken place.

There is one theory that the ancestors of the present-day Rapanui chiseled the now world-famous statues from the hard volcanic rock during generations of arduous toil.

Thor Heyerdahl, whom I respect highly, describes in his book *Aku-Aku* how he found hundreds of stone implements lying about in confusion in the quarries. From this mass find of primitive tools, Heyerdahl concluded that an unknown number of men chiseled the statues here and then precipitately abandoned their work at some time or other. They threw down their tools and left them lying where they had been working.

Using a large number of islanders who worked for eighteen days, Heyerdahl erected a medium-sized statue by means of wooden beams and a primitive but successful technique, and then moved it with the help of ropes and about a hundred men on the heave-ho principle.

Here a theory appeared to be proved in practice! Never-

theless, archaeologists all over the world protested against this example. For one thing, they said, Easter Island had always been too short of men and food to have provided the necessary number of stonemasons to carry out the enormous task—even over many generations. For another, they claimed that no finds had yet supplied proof that the islanders had ever had wood at their disposal as building material (for rollers).

After my own reflections on the spot, I think I may say that the stone-tool theory will not stand up for long in view of the facts, which are hard in the literal sense of the word. After Heyerdahl's successful experiment, I was quite prepared to cross an unsolved puzzle off my list as solved. But when I stood in front of the lava wall in the crater Rano Raraku, I decided to let the question mark stay on my list. I measured the distance hacked away between the lava and individual statues, and found spaces of up to 6 feet over a distance of nearly 105 feet. Nobody could ever have freed such gigantic lumps of lava with small, primitive stone tools.

Thor Heyerdahl made the natives hammer away for weeks with the old implements which were found in abundance. I saw the meager result: a groove of a few inches in the hard volcanic rock! We, too, bashed away at the rock like wild men, using the biggest stones we could find. After a few hundred blows, there was nothing left of our tools but a few miserable splinters, but the rock showed hardly a scratch.

The stone-tool theory may be valid for some of the smaller statues which originated in an age nearer our own, but in my conviction and the opinion of many visitors to Easter Island it can in no case be accepted for the excavation of the raw material for the colossal statues from the volcanic stone.

The Rano Raraku crater today looks like a gigantic sculptor's workshop in which knocking-off time had been

suddenly announced in the middle of work. Finished, half-finished, and just-begun statues lie about vertically and horizontally all over the place. Here a gigantic nose towers from the sand, there feet that no shoe could fit sprawl on the scanty grass and elsewhere a face pushes its way through as if gasping for breath.

Mayor Ropo had stood by, shaking his head, as we attacked the rock with all our might.

"What are you laughing at?" my friend Hans Neuner shouted at him. "That's what your ancestors did, didn't they?"

Ropo gave a broad grin. With a sly look on his face, he said drily: "So the archaeologists say."

So far no one has been able to produce even a tolerably convincing reason why a few hundred Polynesians who found it hard enough to win their scanty nourishment took such pains to carve some six hundred statues.

No one has been able to give a clue as to the highly advanced techniques with which the stone blocks were freed from the hard lava.

So far no one has been able to explain why the Polynesians—if they were the sculptors—endowed the faces with shapes and expressions for which there was no model on the island: long, straight noses, narrow-lipped mouths, sunken eyes and low foreheads.

No one knows who the sculptures are supposed to represent.

Not even Thor Heyerdahl!

Perhaps it seems presumptuous of me not only to reject Heyerdahl's theory that stone tools were used to make the statues, but also to use the presence of several hundred stone implements to try to prove exactly the opposite, namely that the colossal statues could not have been made in that way.

In case that sounds incredible, here is my explanation—as usual, one that seems fantastic.

A small group of intelligent beings was stranded on Easter Island owing to a technical hitch. The stranded group had a great store of knowledge, very advanced weapons, and a method of working stone unknown to us, of which there are many examples around the world. The strangers hoped they would be looked for, found, and rescued by their own people. Yet the nearest mainland was some 2,500 miles away.

Days passed in inactivity. Life on the little island became boring and monotonous. The unknowns began to teach the natives the elements of speech; they told them about foreign worlds, stars and suns. Perhaps to leave the natives a lasting memory of their stay, but perhaps also as a sign to the friends who were looking for them, the strangers extracted a colossal statue from the volcanic stone. Then they made more stone giants which they set up on stone pedestals along the coast so that they were visible from afar.

Until suddenly and without warning salvation was there.

Then the islanders were left with a junk room of just-begun and half-finished figures. They selected the ones that were nearest completion and year after year they hammered doggedly away at the unfinished models with their stone tools. But the some two hundred figures that were still only sketched on the rock face defied the fleabites of the stone implements. Finally the carefree inhabitants who lived only for the day—even today they are not very fond of hard work—gave up the thankless task, threw away their tools, and returned to their primitive caves and huts.

In other words, the arsenal of several hundred stone tools that had failed to dint the unyielding cliff was left by them and not by the original sculptors. I claim that the stone tools are evidence of resignation in the face of a task that could not be mastered.

I also suspect that the same masters gave lessons on Easter Island, at Tiahuanaco, above Sacsayhuaman, in the Bay of Pisco and elsewhere. Obviously it is only one of other possible theories and it can be opposed by referring to the great distances. But then people would be omitting to take into account my theory—and I am by no means the only one to hold it—that in the remote past there were intelligences with an advanced technology for whom the covering of vast distances in aircraft of the most varied kinds was no problem.

People may doubt my theory, but they must admit that it looks as if it had been child's play for the original sculptors to cut the stone colossi from the hard rock.

Perhaps it was only a spare-time activity for them.

But perhaps they had a very specific purpose in mind.

Did they get bored with the statue game one day?

Or did they get an order that compelled them to stop?

At all events they suddenly disappeared.

So far no deep excavations have been made. Perhaps remains would be found in the lower strata that would make possible a significantly earlier dating.

The Americans are building an airfield; they are digging up the ground for a concrete runway. But I did not see any systematic excavations, nor have I heard of plans for any. The islanders—and why not, indeed?—go about their business without worrying. The tourists who take the trouble to come here marvel at what they see and take souvenir snaps for the family album. Serious archaeological investigations that could clear up the puzzle are not taking place.

It is known that the Moais, as the islanders call the statues, once wore red hats on their heads and that the material for them was taken from a different quarry from the one used for heads and bodies. I have actually seen the hat quarry. In comparison with the quarry in the Raro Raraku crater, it is like a gravel pit dug by a child. The

quarry must have been far too cramped a workplace for making the big red hats. The red hats themselves, which are brittle and porous, also make me skeptical.

Were they cut out and carved here at all?

I incline to the assumption that the red hats were cast from a mixture of gravel and red earth. Many hats are hollow inside. Did their sculptors want to save weight to make transport easier? Anyone who accepts the method of making the hats by a cast of gravel and earth—and it sounds reasonable—simultaneously has the baffling transport problem solved. The round hats must simply have been rolled from the gravel pit to the sites of the statues, which were always situated lower down.

When we discussed this possibility, Mayor Ropo thought that the hats must have been much larger when they were made in the gravel pit because they would have lost a lot by abrasion when they were rolled down. That may be so, but even today the hats are a respectable size, with a circumference of 25 feet and a height of 7 feet 2 inches. It must still have been quite a feat to put such headgear on the heads towering 33 feet above the ground.

But why were the red hats put on the strange statues at all? So far, I have not found a convincing explanation in the whole of the literature about Easter Island. So I ask myself the following questions:

Had the islanders seen "gods" with helmets and remembered the fact when it came to making the statues?

Was that the reason why the statues did not seem complete to them without the hat-helmets?

Are they meant to express the same thing that helmets and halos express on prehistoric cliffs and cave walls all over the world?

When the first white men visited Easter Island, inscribed wooden tablets still hung from the necks of the Moais, but even these first curious arrivals could not find a single islander who knew how to read the writing. So far,

the few wooden tablets still extant have not yielded up their secrets. Nevertheless, they are proof that the Rapanui of the past knew a script, which, I may mention in passing, is astonishingly like Chinese. The generations who came after the "visit of the gods" forgot what the others had learned.

Letters and inexplicable symbols are also found on the petroglyphs, the large flat stones with writing and drawings that lie scattered about on the beach like carpets. Many of these torn and fissured stones have surface areas of 24 square yards. They lie about wherever the ground is reasonably level. On them we found fish, indefinable embryonic beings, sun symbols, balls and stars.

To make the drawings clearer to us, Mayor Ropo went over the lines with chalk. I asked him if anyone knew how to interpret the signs.

No, he said; even his father and grandfather had not been able to tell him anything about them. He himself thought that the petroglyphs contained astronomical data. He said that all the temples on the island had also been aligned according to the sun and the constellations.

Then our excursion to Easter Island paid a special dividend. Mayor Ropo took us to the beach and showed us a stone egg of astonishing proportions. While we walked round the stone relic, he explained that in Rapanui tradition this egg had originally lain in the center of the Temple of the Sun, for the "gods" had come to them from an egg. (Discovered at Easter, 1722, the least Easter Island could do was to produce an Easter egg as a surprise for us.) I gratefully added this information to my files on strange stone eggs all over the world.

A few yards away from the army of fallen statues, the artificial egg crumbles away on the shore of the island. Only a white catalog number differentiates the egg of the gods from the hodge-podge of stones on the beach.

10

To India to Consult the Sacred Texts

"AND I entered the large room that shone as brightly as the interior of a temple. Beings with human faces and human hands were running about everywhere. They were carrying all kinds of apparatus and often cases of different sizes as well. They gave them to other beings who stood behind low walls and wore peculiar headgear with the sign of the eagle. The temple hall was filled with celestial music. I did not know where it came from. Often I heard an angel's voice and once I caught the words: 'Flight 101 to New York—gate 12.'

"Then a cherub took me by the hand and led me to a seraph who was very kind to me and gave me a small piece of paper and said, 'Your ticket.' I could not decipher the divine writing on it. And then the cherub stood next to me again and led me to a big gleaming, heavenly bird which stood on a large smooth area in the vast park of the heavenly beasts. The heavenly bird rested on eight black wheels that protruded from the metal belly of the motionless monster like calves' feet and seemed to be of tanned leather. The gigantic wings of the gleaming heavenly creature were spread wide. Everyone awaited the god who was to fly with us and whom my cherub called the pilot.

"As I climbed the silver ladder to the bird, I saw on the

wings four great boxes, each of which had a large hole in it. And I saw that many wheels turned in one of these holes. The heavenly bird obviously belonged to the god Swissair, for a brightly shining wall spoke this name often.

"In the belly of the bird of the god, the air was filled with the sound of harps and a pleasing smell of jasmine rose to my nostrils. Now another cherub with an incomparably lovely figure came and put me in a throne and fastened a broad band tightly round my waist. The harp music died away; a god's voice announced: 'Please stop smoking and fasten your seat belts.' The voice proclaimed many more prophecies which I understood as little as I had understood everything else that had been said. Suddenly a terrible noise, like the roaring and thundering of a violent storm, was heard. The bird shuddered, started to move and roared away from the other diving birds faster than the fleeing leopard. And it rushed away faster and faster, mighty as the surge of the sea, strong as the sons of our first mother the Sun. Fear oppressed my breast like a tight-fitting red-hot band. My senses swam.

"Then the charming cherub stood beside me again, handed me intoxicating divine nectar, raised her hand and opened a sluice above me. A refreshing celestial wind blew in my face. Now I raised my eyes and, lo, from out of the belly of the divine bird I could see the wings which were motionless and did not move like the flapping of birds' wings. Below me I caught sight of water and clouds and a jumble of green and brown in strange jagged shapes. I felt very disturbed and I gave a start. Then the cherub stood beside me yet again and made known to me the wisdom of the heavenly one: 'Be not afraid, no one has ever stayed up here.' "

I have just recounted a plane journey as it might have been told by one of our remote ancestors if he had flown from Zurich to New York in a modern jet aircraft. Appar-

ently an absurd fancy, but we shall see that it is by no means so ridiculous.

The prophet Ezekiel 10:1–19 gives an account that suggests a definite association of ideas after my imaginative attempt to reproduce an ancestor's story of a journey by plane:

> Then I looked, and, behold, in the firmament that was above the head of the cherubims there appeared over them as it were a sapphire stone, as the appearance of the likeness of a throne.
>
> And he spake unto the man clothed with linen, and said, Go in between the wheels, even under the cherub, and fill thine hand with coals of fire . . . And he went in in my sight.
>
> Now the cherubims stood on the right side of the house, when the man went in; and the cloud filled the inner court.
>
> Then the glory of the Lord went up from the cherub, and stood over the threshold of the house; and the house was filled with the cloud, and the court was full of the brightness of the Lord's glory.
>
> And the sound of the cherubims' wings was heard even to the outer court, as the voice of the Almighty God when he speaketh.
>
> And it came to pass, that when he had commanded the man clothed in linen, saying, Take fire from between the wheels, from between the cherubims; then he went in, and stood beside the wheels.
>
> And when I looked, behold the four wheels by the cherubims, one wheel by one cherub, and another wheel by another cherub: and the appearance of the wheels was as the color of a beryl stone.
>
> And as for their appearances, they four had one likeness, as if a wheel had been in the midst of a wheel.
>
> When they went, they went upon their four sides; they turned not as they went, but to the place whither the head looked they followed it . . .

And their whole body, and their backs, and their hands, and their wings, and the wheels, were full of eyes round about, even the wheels that they four had.

As for the wheels, it was cried unto them in my hearing, O wheel.

And when the cherubims went, the wheels went by them: and when the cherubims lifted up their wings to mount up from the earth, the same wheels also turned not from beside them.

When they stood, these stood; and when they were lifted up, these lifted up themselves also . . . ,

And the cherubims lifted up their wings, and mounted up from the earth in my sight: when they went out, the wheels also were beside them. . . .

The International Academy for Sanskrit Research in Mysore, India, was the first body to make the experiment of rendering a Sanskrit text by Maharshi Bharadvaya, a seer of an early period, in a way suited to our modern way of thinking. The result that lay before me in black and white was so astounding that during my journey to India in the autumn of 1968, I had the accuracy of the translation checked both in Mysore and at the Central College of Bangalore. This is how the modern translation of an ancient Sanskrit text reads:

6. An apparatus that moves by inner strength like a bird, whether on earth, in the water or in the air, is called Vimana . . .

8. which can move in the sky from place to place . . .

9. country to country, world to world . . .

10. is called a Vimana by the priests of the sciences . . .

11. The secret of building flying machines . . .

12. that do not break, cannot be divided, do not catch fire . . .

13. and cannot be destroyed . . .

14. The secret of making flying machines stand still.

15. The secret of making flying machines invisible.

16. The secret of overhearing noises and conversations in enemy flying machines.

17. The secret of taking pictures of the interiors of enemy flying machines.

18. The secret of ascertaining the course of enemy flying machines.

19. The secret of making beings in enemy flying machines unconscious and destroying enemy machines. . . .

Later on in the text the thirty-one main pieces of which the machine consists are accurately described. It also enumerates sixteen kinds of metal that are needed to construct the flying vehicle, but only three of them are known to us today. All the others have remained untranslatable to date.

The experiment that was made in Mysore with this text, the age of which is still unknown, should be set up as an example of what old texts can express in modern translation.

A curiosity that leaves me no rest has always drawn me to the old Indian source books. What a mass of fascinating and mysterious information about flying machines and fantastic weapons in the remote past can be found in the translations of the Indian Vedas and epics. The Old Testament with its vigorous, vivid descriptions pales beside these Indian jewels.

My curiosity about the original sources became even greater owing to a purely chance encounter. After a lecture which I had given to a small circle in Zurich in 1963, an Indian student came up to me and said with disarming candor: "Do you really find anything new or shocking about what you have told us? Every half-educated Indian knows the main sections of the Vedas and so knows that the gods in ancient times moved about in flying machines and possessed terrible weapons. Really, every child in India knows that!"

Basically, the nice young man only wanted to confirm

my theory, and perhaps to calm me down as well, for I get easily excited about my pet subject. He achieved exactly the opposite effect.

In the years that followed, I carried on a rather one-sided correspondence with Indian Sanskrit scholars. They answered my specific questions very politely and sent me photostats of Sanskrit texts that I could not read. The only people who profited by my obsession were my stamp-collecting friends. There was no peace left for me. I had to go to India—because of the texts.

In the autumn of 1968 I flew to Bangalore, the capital of the southern state of Mysore. Bangalore is the educational center of southern India. Yet at first I did not notice this at all. On the first day of my arrival a kaleidoscope of bewildering impressions passed before my eyes. Beggars and starvation existence—oxcarts and moped taxis—women with diamonds in their noses and a red spot on their foreheads—dilapidated wooden huts and white palaces in the English colonial style—bustle in the streets and gaunt holy cows with red eyes—soldiers in bluish-green uniforms and dirty-yellow water at the edges of the streets, and above all, the peculiar smell which seemed to penetrate right into my brain.

The University of Bangalore, which benefits from overseas aid, is magnificently equipped and full of forward-looking intellects. Professors and students work together on solving new scientific problems.

Specialist professors of Sanskrit such as Ramesh J. Patel from the Cultural Center at Kochrab and T. S. Nandi from the University of Ahmedabad gave me their valuable time. Generally a single phone call was enough to fix the time and place for a conversation.

I asked about the age of the Vedas and epics. Scholars were unanimous in telling me that the Mahabharata, the national epic of the Indians with more than 80,000 couplets, must have originated in its first established form

about 1,500 B.C. But when I inquired about the original core of the epic, the answers were either 7016 or 2604 B.C. The unusual precision for datings lying so far back in the past was due to specific astronomic constellations mentioned in connection with a battle described in the Mahabharata. In spite of these astronomical data, the specialists have not yet agreed on the age of the epic. As with the Old Testament, the original author of the Mahabharata is unknown. It is suspected that a legendary figure, Vyasa, was the original creator, but it is said with considerable assurance that the last oral narrator, Sauti, also prepared the first complete written version.

For the benefit of the mathematicians who will have to feed their computers with data to find out the time dilation on interstellar flights, I may mention two numbers that I noted in Bangalore. In the Mahabharata 1,200 divine years equal 360,800 human years!

How furious I was that I could not read Sanskrit! Everyone was most helpful; I was told exactly in which texts and in which passages I should find the superweapons, flying weapons and flying machines I was looking for. People got on the phone and warned librarians of my imminent arrival and the texts I wished to see; they gave me willing students to accompany me and make sure I found exactly what I wanted. And then when I expectantly held the answer to my questions in my hands, the essential thing was written in Sanskrit or some other Indian language. Disappointed by the meager results, I decided to keep up the contacts I had made and return one day a wiser man.

I still had hopes that one authority would be able to satisfy my curiosity by telling me about the texts in greater detail. I had corresponded from Switzerland with Professor T. S. Nandi, Sanskrit scholar in the University of Ahmedabad. I consulted him in India and through him I met Professor Esther Abraham Solomon, who is his

chief. She has a vast knowledge of Sanskrit. She has been head of the Sanskrit Department for six years and scholars throughout India look up to her as one of the greatest experts on the subject.

Ahmedabad is an old cotton town with many important mosques and tombs from the fifteenth and sixteenth centuries. It lies right on the River Sarbarmatic, has more than 1,200,000 inhabitants and today is famous for the University of Gujerat founded in 1961.

Ahmedabad has a special tourist attraction, the Shaking Towers. They are the two tall minarets of a mosque, massively built and climbable inside by a spiral staircase right to the top—barefoot, of course. These towers have a peculiarity that is unique in the world. If a small group of people sets one tower in motion by a rhythmical to-and-fro movement, the other tower begins to swing too. So far the towers have easily stood up to these constant tourist antics and they look as if they will survive the leaning tower of Pisa.

Professor Nandi had arranged for me to meet Professor Esther Solomon at noon and told me: "Go up to the first floor; her name is on the door, go in and make yourself comfortable."

I set off in the blazing midday sun—it was November. The university was a modern, functional two-story limestone building with no unnecessary external trimmings. I waited in the vestibule. To a European the encouragement "Go in and make yourself comfortable" is very unusual. While I was waiting, I watched professors and students going into the various offices without knocking as if it were the most natural thing in the world and observed how politely and informally they mixed with each other.

Professor Solomon arrived about one o'clock. She had been kept at a seminar. She wore a simple white sari. I estimated her age at about fifty. She greeted me like an

old friend, obviously because Professor Nandi had told her about me. We carried on our conversation in English and she allowed me to tape it on my portable tape recorder.

This was our conversation: "Professor, am I interpreting the information of your colleagues correctly if I say that Sanskrit scholars consider the old Indian Vedas and epics to be older than the Old Testament?"

"We cannot and should not make such absolute claims. Neither the ancient Indian texts nor those of the Old Testament can be dated exactly. Although we are inclining more and more to date the oldest parts of the Mahabharata to around 1500 B.C., it is a very cautious estimate and an assumption that refers to the oldest, central core of the epic. Naturally there were many additions and elaborations that were not made until 'A.D.' Even today exact datings must still be made with reservations. The original nucleus of the Mahabharata may well be a hundred and more years older than 1500 B.C. You know that the oldest texts were written on the bark of palm trees; yet before these palm texts originated, the texts had already been handed down orally for many generations. There are also inscriptions on stone, but they are comparatively rare in India."

"In your work have you come across parallels between the texts of the Old Testament and the original Indian texts?"

"Undoubtedly there are some parallels, but in my opinion these similarities can be observed in some form or other in most peoples' legends. You have only to think of an event like the Flood or the story of the gods who created men, or the heroes who were snatched up to heaven, or the constant references to the weapons they used."

"But it is the old Indian and Tibetan texts in particular that teem with science-fiction weapons. I am thinking of the divine lightning and ray weapons, of a kind of hyp-

notic weapon, like the one mentioned in the Mahabharata, and of the discus which the gods threw and which always returned to them like a boomerang, and of the texts that seem to be referring to bacteriological weapons. What do you think about them?"

"They are just exaggerations of fanciful descriptions of an imaginary divine power. The ancients undoubtedly felt the need to endow their leaders and kings with a mystical, mysterious nimbus. They certainly invented the incredible and invulnerable attributes later—multiplying them with each new generation."

"Can these fantastic conceptions be reconciled with the world of ideas of primitive times?"

"Obviously. But we ourselves are always being confronted with puzzles!"

"Flying objects called Vimanas are continually being described in Indian and Tibetan texts. What do you think about them?"

"To be quite honest, I don't know what to make of them. The descriptions obviously mean something like airplanes, in which the gods fought in the sky."

"Then can we or should we simply classify these traditions as myths and dispose of them like that?"

Professor Solomon thought for a moment before she answered, almost with resignation:

"Yes, we should."

"And supposing these texts were descriptions of very remote real events?"

"That would be fantastic!"

"But would it be impossible?"

After a pause:

"I don't know. I really don't know."

Outside, I was assailed again by the intolerable heat. I strolled slowly back to the town over a bridge that seemed to be needless. The river had dried up to a narrow stream. Carpetmakers had laid out their colorful products

to dry in the riverbed as far as the eye could see. Again and again I tried to recapitulate the conversation. Even this highly intelligent woman could not give a satisfactory answer to my questions.

But it is precisely what Professor Solomon could not clearly confirm that has driven me for more than a decade to compare the oldest books of mankind with my theory in mind and to track down parallels in descriptions of specific events.

Back in my hotel, the air conditioning in my room put some life into me again. I opened the Mahabharata at random and came across this passage:

> Brighu, asked about the dimensions of the tent of the sky, answered:
>
> "Infinite is that space inhabited by the blessed and the divinities, delightful it is, studded with many dwellings, and its boundary is unattainable.
>
> "Above its sphere of power and below, the sun and moon are no longer seen, there the gods are their own light, shining like the sun and flashing like fire.
>
> "And even they do not see the boundary of the mighty outspread tent of the heavens, because this is hard to reach, because it is infinite . . . But upwards and ever upwards that universe that cannot even be measured by the gods is filled with flaming, self-illuminating beings.

The accounts in the Mahabharata still belong to the unsolved riddles of the past, even in India where this ancient text is subjected to the most minute and even pedantic scholarly scrutiny.

Ever since man has been able to think and use language, he has invented myths and legends, which, after being told for millennia, have been written down at some point in time. It is puzzling why some of these old traditions became religions or basic philosophies governing mankind's action and others were rejected and remained

without influence. A common feature of all ancient traditions is that their contents are not demonstrable, and that those which have been elevated to religions are believed. When we try to interpret old texts from new standpoints today, no new versions are available to us, so we have only the old believed or rejected texts to go on. Nevertheless, they provide us with startling information. But apparently it is not done to call traditionally believed dogma in question or to take mythical accounts as reports of real events.

In the library of the Sorbonne in Paris, I buried myself in the complete seven-volume edition of the Cabbala. Before I describe the fruits of my reading, I must say briefly that the Cabbala is certainly the most comprehensive and puzzling secret doctrine in the world. A start on writing it down is supposed to have been made around 1200 A.D. It is also said that it originated as a reaction against the realism and materialism of the Talmud.

The Cabbala interprets mysterious pronouncements in the Old Testament and comments for a circle of initiates on the encoded messages in old Jewish laws. The cabbalists say that the book was written down at God's command. It contains secret signs, symbols, and mathematical formulae, and links all occult data with the mystical power of various gods. Those who belong to the small circle of initiates and have fully mastered the secrets of the Cabbala are supposed to be given the power to perform miracles.

Just as I am in the habit of considering the descriptions in other ancient texts as real, I have also taken the stories in the Cabbala as factual accounts written down after the event. It is the only way to penetrate the occult ideas of the Cabbala and find a real trace that leads from our earth to the "gods."

The "seven other worlds" of the Cabbala, with their inhabitants, are described in great detail in a number of

passages. Here are some extracts of which I reproduce the general sense:

The inhabitants of the world of Geh sow and plant trees. They eat everything from trees, but know no wheat or any kind of cereal. Their world is shadowy and there are many large animals in it.

The inhabitants of the world of Nesziah eat shrubs and plants, which they do not have to sow. They are small in stature and instead of noses have two holes in their heads through which they breathe. They are very forgetful and when doing a job of work often do not know why they began it. A red sun is seen in their world.

The inhabitants of the world of Tziah must not eat what other beings eat. They constantly seek for underground watercourses. They are very fair of face and have more faith than all other beings. There are great riches and many handsome buildings in their world. The ground is dry and two suns are visible.

The inhabitants of the world of Thebel eat everything from the water. They are superior to all other beings and their world is divided into zones in which the inhabitants differ facially and in color. They make their dead to live again. The world is far away from the sun.

The inhabitants of the world of Erez are descendants of Adam.

The inhabitants of Adamah are also the descendants of Adam because Adam complained of the cheerlessness of Erez. They cultivate the earth and eat plants, animals and bread. They are mostly sad and often make war on each other. There are days in this world and the groupings of the constellations are visible. In the past they were often visited by the inhabitants of the world of Thebel, but the visitors were stricken with failing memories on Adamah and no longer knew whence they came.

The inhabitants of the world of Arqa sow and harvest. Their faces are different from our faces. They visit all worlds and speak all languages.

Once again the old familiar questions arise. How did the authors of the Cabbala know that the beings in the seven other worlds had a different appearance from the citizens of earth? How did they know that they ate different food and knew other suns in the sky?

It is also worth mentioning the statement in the Cabbala that originally human beings did not look each other in the face during the sexual act and that the union of the seeds took place in a *single* being. Modern Cabbalists claim that, before Adam, God created another being who was man only, a characteristic that did not prevent this being from producing children, who later mated with the snake.

The main work of the Cabbala, the Book Zohar, is written in Aramaic and interprets the Pentateuch from the standpoint of the cabbalistic conception of God. The Zohar is considered to be the work of Rabbi Simon bar Yochai (A.D. 130–70), but was probably first written down from oral traditions by Moses de Leon in Spain at the end of the thirteenth century and first printed in Cremona in 1558.

In the Zohar—and this is astounding—a conversation between an earthman and someone stranded from the world of Arqa is given. In this dialogue we learn that after the earth had been destroyed by fire, some refugees, who had survived the catastrophe and were led by Rabbi Yossé, met a stranger who suddenly emerged from a crack in the rock and had "a different face." Rabbi Yossé went up to the stranger and asked where he came from.

The stranger answered:

"I am an inhabitant of Arqa."

The refugee was surprised and asked:

"You mean there are living creatures on Arqa?"

The stranger replied:

"Yes. When I saw you coming, I climbed out of the

cave in order to learn the name of the world on which I had arrived."

And then the stranger said that in his world the seasons were not the same as in their country; there sowing and harvest would only recommence after several years; the arrangement of the constellations was also different from the way it looked on earth. . . .

Nearly 1,800 years of oral tradition stand behind this account, which was not written down until about 700 years ago and only printed for the first time 400 years ago. But once again I have to ask what ancient knowledge was hidden behind these words.

Naturally a stranger who visited the earth saw the constellations from a different point of view from the one he was used to on his own planet, which also had its seasons in a different sequence from the earth.

The statements are basically too realistic to be brushed aside as pure fantasy.

Then we have the Book of Dzyan with its sacred symbolic signs. No one in the world knows its real age. It is said that the original is older than the earth. It is also said that it was so strongly magnetized that the elect who took it in their hands saw the events described pass before their eyes and at the same moment they could understand the mysterious texts through rhythmically transmitted impulses, provided their language had an adequate vocabulary.

For thousands of years this esoteric doctrine was guarded as top secret in Tibetan crypts. It was said that the secret teaching could be tremendously dangerous in the hands of ignorant people. The original text—it is not known if it still exists somewhere—was copied word for word from generation to generation and amplified by the elect with new accounts and new knowledge they had acquired.

The Book of Dzyan is supposed to have originated be-

yond the Himalayas. By unknown routes its teaching reached Japan, India, and China, and traces of its ideas are even found in South American traditions. Secret fraternities, who hid themselves in the solitary passes of the west Chinese Kun-lun range or in the deep gorges of Altyn-tag, situated also in the western part of present-day Red China, watched over collections of books of vast size. They lived in miserable temples. Subterranean vaults and passages concealed their literary treasures. The Book of Dzyan was also guarded in these fastnesses. The first fathers of the church made every effort to erase this secret doctrine from the memories of those who were familiar with it. Yet all their efforts failed and the texts were transmitted orally from generation to generation.

I have often been told about this teaching in foreign countries, but I have never met anyone who had seen a genuine copy of the book. Parts of the Book of Dzyan that have been preserved or, more accurately, become known, circulate through the world in thousands of texts translated into Sanskrit. By all accounts this remarkable secret doctrine is supposed to contain the primordial ancient word, the formula of creation, and to tell of the evolution of mankind over millions of years.

The seven stanzas of the creation according to the Book of Dzyan are so interesting that I shall quote extracts from them here:

Stanza I

Time was not, for it lay sleeping in the infinite bosom of duration . . .

Darkness alone filled the boundless all . . .

And life pulsated unconscious in universal space.

The seven sublime lords and the seven truths had ceased to be . . .

Stanza II

Where were the builders, the luminous sons . . . The

producers of the form from no-form—the root of the world . . . ?

The hour had not yet struck; the ray had not yet flashed into the germ . . .

Stanza III

The last vibration of the seventh eternity thrills through infinitude.

The vibration sweeps along, touching with its swift wing the whole universe and the germ that dwelleth in darkness, the darkness that breathes over the slumbering waters of life . . .

The root of life was in every drop of the ocean of immortality, and the ocean was radiant light, which was fire, and heat, and motion. Darkness vanished and was no more . . .

Behold . . . bright space, son of dark space . . . He shines forth as the sun; he is the blazing divine dragon of wisdom.

Where was the germ, and where now was the darkness? . . .

The germ is that and that is light, the white brilliant son of the dark hidden father.

Stanza IV

Listen, ye sons of the earth, to your instructors, the sons of fire . . .

Learn what we, who descend from the primordial seven, we, who are born from the primordial flame, have learnt from our fathers.

From the effulgency of light—the ray of the ever-darkness—sprang in space the reawakened energies . . . And from the divine man emanated the forms, the sparks, the sacred animals, and the messengers of the sacred fathers . . .

Stanza V

The first seven breaths of the dragon of wisdom produce in their turn from their holy circumgyrating breaths, the fiery whirlwind.

The swift son of the divine sons . . . runs circular errands . . . He passes like lightning through the fiery clouds . . .

He is their guiding spirit and leader. When he commences work, he separates the sparks of the lower kingdom, that float and thrill with joy in their radiant dwellings . . .

Stanza VI

The swift and radiant one . . . seats the universe on the eternal foundations . . .

He builds them in the likeness of older wheels, placing them on the imperishable centers . . .

How were they built by Fohat? He collects the fiery dust. He makes balls of fire, runs through them, and round them infusing life thereinto, then sets them into motion . . . They are cold, he makes them hot. They are dry, he makes them moist. They shine, he fans and cools them. Thus acts Fohat from one twilight to the other, during seven eternities.

The mother's spawn filled the whole. There were battles fought between the creator and the destroyers, and battles fought for space.

Stanza VII

Behold the beginning of sentient formless life. First, the divine, the one from the mother spirit . . .

The one ray multiplies the smaller rays . . .

Then the builders, having donned their first clothing, descend on radiant earth and reign over men—who are themselves.

This creation myth really needs no further commentary for the educated reader. It is uncanny how these texts really interpret themselves in the age of space travel. Only a few concepts need enlarging on.

The eternal mother = space.

Seven eternities = aeons or periods. Eternity in the sense of Christian theology is meaningless in Asian ideol-

ogy. An aeon extends over a great period of time, *i.e.*, 100 years of Brahma or 311,040,000,000,000 terrestrial years. A day of Brahma consists of 4,320,000,000 years for mortal. Brahma is the force that creates and preserves all worlds. May I remind readers of the laws of time dilation without which these measurements of time are inconceivable.

Time = succession of states of consciousness.

Space = matter.

Light = something unimaginable because its source is unknown.

Father and mother = male and female principle of primordial nature.

Seven sublime lords = seven creative spirits.

Builders = the real creators of the universe, or architects of the planetary system.

Breath = dimensionless space.

Ray = matter in the world egg.

Last vibration of the seventh eternity = periodically appearing phenomenon of the universal intelligence.

Virgin egg = symbol of the original shape of everything visible—from the atom to heavenly bodies.

Sons of the earth—sons of fire = cosmic forces that have taken form.

Fohat = constructive force of cosmic energy.

(Quotations and exegesis are taken from *The Secret Doctrine* by Helene Petrovna Blavatsky, published in Germany in 1888!)

Other sections of the Book of Dzyan reputedly tell us that 18,000,000 years ago there were living creatures on earth that were boneless and rubberlike, and vegetated without reason or intelligence. These beings are supposed to have reproduced themselves by division. On the course of a long evolution, a peaceful and gentle kind of being originated in this way 4,000,000 years ago. These beings lived in a period of tranquil bliss, in a world of

happy dreamers. In the next 3,000,000 years a giant race of a very different kind developed. These giants, it says in Dzyan, were androgynous and mated with themselves. Then 700,000 years ago they began to mate with she-animals, but terrible-looking monsters resulted from this kind of reproduction. These monsters were unable to free themselves from this bestial method of reproduction and became dependent on animals and dumblike animals.

The Book of Dzyan is supposed to state that large areas of land sank in the ocean off present-day Cuba and Florida in 9,564 B.C. So far the legendary Atlantis has not been located, although the most recent theories suggest that it was the island of Thera in the Mediterranean.* Could it be identical with the sunken country that the Book of Dzyan tells about? I do not know. Perhaps Atlantis is like unidentified flying objects—both of them are firmly rooted in man's imagination.

Mahabharata, Cabbala, Zohar, Dzyan. Identical as to facts that point in one direction.

Are they accounts of things that really happened?

* See James W. Mavor, *Voyage to Atlantis* (New York, Putnam, 1969).

II

The Perversions of Our Ancestors

IN days of yore there must have been a hybrid of man and animal. The literature and art of antiquity leaves no doubt about that. Pictures of winged beasts with human heads, mermaids, scorpion men, birdmen, centaurs, and many-headed monsters are all vividly in our memory. Old books say that even in historical times these hybrid beings lived together in hordes, tribes, and even in larger units like peoples. They tell of specially bred hybrids who spent their existence as temple animals and seem to have been the spoiled darlings of the populace. The Sumerian kings and later the Assyrians hunted half men, half animals—possibly just for diversion. Mysterious texts refer to half humans and hybrids, whose remarkable existence constantly evaporates into the uncheckable realms of the mythical.

The Egyptian ram still haunts the stories of the Orders of Knights Templar founded in the twelfth century. He is depicted walking upright, with human hair on his head, goat's feet, goat's hind parts, and a large phallus. In his *Egyptian History,* Herodotus (490–425 B.C.) speaks of strange black doves, which were supposed to have been women (II, 57). The Indian Vedas tell of mothers who "walk on their hands." The Epic of Gil-

gamesh says that Enkidu must be "estranged from the animals." At the wedding of Pirithoüs, the Centaurs, who had human torsos and horses' bodies, violated the wives of the Lapithae. Six youths and six maidens had to be sacrificed to the bullheaded Minotaur. Lastly, it is obvious that Hephaestus' lively maidens had a sexual connotation. I also have very little doubt that the dance around the golden calf was the climax of a sexual orgy.

Plato writes in his *Symposium:* "Originally there was a third sex in addition to the male and female sexes. This human had four hands and four feet . . . great was the strength of these humans, their minds were presumptuous, they planned to storm heaven and to lay violent hands on the gods . . ."

The Cabeiri, mostly called the great gods in inscriptions, carried on a mysterious cult with fertility demons, which continued from ancient Egyptian times through the Hellenistic period and down to the flowering of the Roman culture. As the Cabeiri's rites were secret, it has not yet been possible to find out what sort of hearty sex games the ladies and gentlemen played with one another. Nevertheless, it is certain that two male and two female Cabeiri, as well as an animal, always took part in these diversions. The man and woman were not the only ones to copulate, the animal played an active role, too!

Perhaps I also ought to mention in this connection the Egyptian bulls of Apis, the "sacred bulls of Memphis." Because of their fertility they were mummified in sarcophagi over 9 feet long and 12 feet high. Three years ago I stood in some of these musty burial chambers deep below the sands of the desert and asked myself what these fertile animals had done in their lifetime.

Tacitus (*Annals,* XV, 37) describes a nocturnal orgy in the house of Tigellinus at which illicit intercourse took place with the cooperation of half men, half animals. It

cannot be ascertained how long these perversions were carried on in secret societies.

Sometimes the business seems to have been rather embarrassing to Herodotus and he tries to gloss it over (II, 46): "In this province not long ago, a goat tupped a woman in full view of everybody—a most surprising incident."

The god Pan was depicted with goat's feet and a goat's head by classical artists. That, too, upset Herodotus (II, 46): "But that is how they paint him, why, I should prefer not to mention."

The Jewish Talmud recounts that Eve coupled with a snake. This idea inspired many artists. A woman with well-developed breasts and a snake's tail is depicted on potsherds found at Nippur—a representation, incidentally, that is not unlike those of the sirens who covet handsome young men.

Distressing as it is, the sinful side of our past cannot be wiped out. Pornography has been a sought after stimulant in all ages. Prehistoric pictures of sexual excesses on clay tablets, rock faces, and animal bones speak for themselves.

Strange half-human, half-animal beings can be made out on the reliefs on the black obelisk of Salmanasar II in the British Museum. In the Louvre, the Museum of Baghdad, and elsewhere there are pictures of remarkable couplings between animals and humans. Large stone figures with an extraordinary anatomy exist on the island of Malta. They have globular thighs and pointed feet; they cannot be defined sexually at all. Pictures of demi-men on Assyrian works of art are no rarity. The accompanying texts tell of captured men-animals, who were chained, carried off, and given a tribute from the land of Musri to the great king. An early Stone Age bone from Le Mas d'Azil, France, shows a hybrid—half man, half ape—

whose phallus must have been particularly attractive.

According to present-day biological knowledges a cross between man and animals is impossible, because the chromosome count of the partners does not tally. Such mating has never produced a viable being. But do we know the genetic code according to which the chromosome count of the mixed beings was put together?

The sexual human-animal cult which was practiced with gusto and enjoyment by the people of antiquity seems to me to have been celebrated against their better judgment. Cannot the better judgment of coupling with one's *own* kind have come only from unknown intelligences?

Did the earth's inhabitants lapse after the "gods" had left?

And was this lapse the same thing as original sin?

Did they perhaps fear the day when the "gods" would return because of their backsliding? The factor that impeded evolution in primitive times was probably interbreeding with animals. From this point of view the Fall was simply arrested or recessive evolution owing to admixture with bestial blood. Original sin only becomes logical if at each birth something of the former animal side is inherited: the bestial in man.

What other kind of sin was there to inherit, for heaven's sake?

The Sumerians had one single concept for the universe: *an-ki,* which can be roughly translated as "heaven and earth." Their myths tell of "gods" who drove through the sky in barks and fire ships, descended from the stars, fertilized their ancestors, and then returned to the stars again. The Sumerian pantheon, the shrine of the gods, was animated by a group of beings who possessed fairly recognizable human shape, but appear to have been superhuman, indeed immortal. But the Sumerian texts do not refer to their "gods" with vague imprecision; they

say quite clearly that the people had once seen them with their own eyes. Their sages were convinced that they had known the "gods" who completed the work of instruction. We can read in Sumerian texts how everything happened. The gods gave them writing, they gave them instructions for making metal (the translation of the Sumerian word for metal is "heavenly metal") and taught them how to cultivate barley. We should also note that according to Sumerian records the first men are supposed to have resulted from the interbreeding of gods and the children of earth.

Sumerian tradition says that the sun god Utu and the goddess of Venus, Inanna (at least), came from the universe. The Sumerian word for "rib" is *ti; ti* also means "to create life." Ninti is also the name of the Sumerian goddess who creates life. Tradition has it that Enlil, the god of the air, made many humans pregnant. A cuneiform tablet says that Enlil discharged his seed into the womb of Meslamtaea: "The seed of thy lord, the gleaming seed, is in thy womb; the seed of Sin, the divine name, is in my womb . . ."

Before men were created and only gods dwelled in the town of Nippur, Enlil raped the delightful Ninlil and made her pregnant on orders from above. At first the lovely child of earth, Ninlil, was unwilling to be fertilized by a "god." The cuneiform text from Ninlil's fear of the act of violation: "My vagina is too small, it does not understand intercourse. My lips are too small, they do not understand how to kiss. . . ."

The divine Enlil overheard Ninlil's words of refusal, but it was a decision of the "gods" to wipe the loathesome brood of unclean beings from the face of the earth and so Enlil discharged into Ninlil's womb. On one of the tablets translated by the Sumerologist S. N. Kramer we read: "In order to destroy the seed of mankind the decision of the council of the gods is proclaimed. According to the

commanding words of An and Enlil . . . their dominion shall come to an end. . . ."

So it was quite clearly a matter of wiping out the impure. Another tablet reads:

> In those days, in the chamber of creation of the gods,
> in their house *Duku* were Lahar and Ashman formed . . .
> In those days Enki said to Enlil:
> "Father Enlil, Lahar and Ashman,
> they who were created in the *Duku,*
> let us allow them to descend from the *Duku.*"

Was the "chamber of creation of the gods" the same as the "Duku"? And was the "Duku" from which the two were to descend the spaceship of the gods? This assumption is automatically suggested by the vivid description.

In 1889, scholars of Pennsylvania University brought home from an expedition the oldest true-to-scale town plan in the world, the plan of the town of Enlil-ki, or Nippur. In this town of the god of the air Enlil, there was a gate for the sexually impure. I think this gate was a protective measure by the gods after their work was done. After they had produced a new generation, they wanted to prevent a lapse into bestiality by separating the new men from their still contaminated environment. One cuneiform tablet even gives a brief reference to the gods' method of fertilization, namely to the implantation of the divine seed.

The Pentateuch, which has already supplied me with such a wealth of illustrative material about the means of locomotion of the galactic supermen of primitive times, is a mine of information for my theory, so long as the texts are read imaginatively, with the eyes of a man living in the age of space travel. So let us make the "gods" come down to earth again, as it were, from Moses' descriptions. Perhaps his accounts also have something new and sur-

prising to tell us about the practice of bestiality among primitive beings.

In Exodus 19:16–19, it is written:

> And it came to pass on the third day in the morning, that there were thunders and lightnings, and a thick cloud upon the mount, and the voice of the trumpets exceeding loud; so that all the people that was in the camp trembled.
>
> And Moses brought forth the people out of the camp to meet with God; and they stood at the nether part of the mount.
>
> And mount Sinai was altogether on a smoke, because the Lord descended upon it in fire: and the smoke thereof ascended as the smoke of a furnace, and the whole mount quaked greatly.
>
> And . . . the voice of the trumpet sounded long, and waxed louder and louder . . .

Exodus 20:18 says:

"And all the people saw the thunderings, and the lightnings, and the noise of the trumpet, and the mountain smoking: and when the people saw it, they removed, and stood afar off."

Does anyone still believe today that the Lord God Almighty had to travel in a vehicle that smoked and lightninged and caused earthquakes, and made a fiendish noise like a jet fighter? God was omnipresent. But if He was, how could He watch over and guard His children and yet appear in such a terrifying way? Why did He frighten His children so much that they ran away from Him? The great, compassionate God! Nevertheless He ordered Moses to keep the people away from the mountain where the landing took place. Exodus 19:23–24 describes this as follows:

> The people cannot come up to mount Sinai: for thou chargedst us, saying, Set bounds about the mount, and sanctify it.

> And the Lord said unto him, Away, get thee down, and thou shalt come up, thou, and Aaron with thee: but let not the priests and the people break through to come up unto the Lord, lest he break forth upon them.

One of David's psalms gives a particularly dramatic description of God appearing (Psalm 29:7–9):

> The voice of the Lord divideth the flames of fire.
> The voice of the Lord shaketh the wilderness; the Lord shaketh the wilderness of Kadesh.
> The voice of the Lord maketh the hinds to calve and discovereth the forests. . . .

There is an enthusiastic account of the landing of a spaceship in Psalm 104:3–4:

". . . who maketh the clouds his chariot: who walketh upon the wings of the wind:

"Who maketh his angels spirits; his ministers a flaming fire. . . ."

But the Prophet Micah outdoes all this (1:3–4):

> For, behold, the Lord cometh forth out of his place, and will come down, and tread upon the high places of the earth.
> And the mountains shall be molten under him, and the valleys shall be cleft, as wax before the fire. . . .

Imagination needs something to spark it off. But what sparked off the chroniclers of the Old Testament? Were they describing something they had not seen at all? Time and again they implore us to believe that everything was just as they described it. And I believe them implicitly; they gave eye-witness accounts. In those days no fantasy could have given them the idea of a vehicle that spits fire, whirls up the desert sand and makes the mountains melt under it. We children of the twentieth century who have read the story of Hiroshima sense for the first time what

God's epiphany as described in the Old Testament might really mean.

I should also like to examine what the Old Testament has to say about artificial insemination. God (or the "gods") had landed on earth in a cosmic vehicle. They began their most important task of fertilizing the inhabitants of earth with their seed. They separated all the people chosen for this experiment from the hybrid bestial world and destined them for the "journey into the wilderness." There they had their guinea pigs in quarantine, so to speak. They protected them from their enemies and gave them manna and ambrosia so that they did not starve. They had to stay like that "in the wilderness" for a whole generation. Exodus 19:4 says:

"Ye have seen what I did unto the Egyptians, and how I bare you on eagles' wings [!], and brought you unto myself."

If it is true that the "gods" were masters of the genetic code, it throws light on the darkness surrounding many texts, for example, the passage in Genesis 1:26–27:

"And God said, Let us make man in our image, after our likeness . . . So God created man in his own image, in the image of God created he him . . ."

Not until later, as I have already mentioned, was woman created from man, as Moses tells us in Genesis 2:22:

"And the rib, which Lord God had taken from man, made he a woman. . . ."

Noah, survivor of the flood and progenitor of the races of the world, was placed in the womb of Bat-Enosh by the "gods." Abraham's wife Sarah, who could no longer bear children because of her advanced age, was visited by God and brought her son Isaac into the world. Moses recounts this in Genesis 21:1:

"And the Lord visited Sarah as he had said, and the Lord did unto Sarah as he had spoken.

"For Sarah conceived, and bare Abraham a son in his old age. . . ."

The Lord confides in the Prophet Jeremiah (1:5):

"Before I formed thee in the belly I knew thee; and before thou camest forth out of the womb I sanctified thee . . ."

The reference to knowing Jeremiah before birth is crystal clear if we take it in the sense of programming according to the genetic code. Many Old Testament stories seem to me to refer to fertilization by the gods. In my interpretation the "gods" created a special race to carry out the terrestrial tasks they later entrusted it with. Moses speaks about the future of the race in Genesis 15:5:

(God is speaking to Abraham) "Look now towards heaven and tell the stars, if thou be able to number them . . . So shall thy seed be."

But the seed must preserve its individuality, according to Leviticus 20:24:

"I am the Lord your God, which have separated you from other people."

However, the "gods" had no end of trouble with their creatures, who could not give up their old habit of coupling with animals. So Moses warns backsliders and threatens them with punishment in Leviticus 18:23 *et seq.*:

> Neither shalt thou lie with any beast to defile thyself therewith: neither shall any woman stand before a beast to lie down thereto: it is confusion.
>
> Defile ye not yourselves in any of these things: for in all these the nations are defiled which I cast out before you:
>
> And the land is defiled: therefore I do visit the iniquity thereof upon it, and the land itself vomiteth out her inhabitants.
>
> Ye shall therefore keep my statutes and my judgments. . . .

The punishments for sin were harsh. They had to be, for intercourse with animals was obviously an everyday occurrence. Here are examples of punishments given by Moses in Leviticus 20:15–16:

> And if a man lie with a beast, he shall surely be put to death; and ye shall slay the beast.
>
> And if a woman approach unto any beast, and lie down thereto, thou shalt surely kill the woman, and the beast: they shall surely be put to death. . . .

The chosen people were finally to be freed from this sexual deviation, but only after spending forty years in quarantine in the wilderness. Afterward, the new generation would be disgusted at the idea of crossbreeding with animals. So the "gods" carried on a hard, but successful battle against the half men, half animals, and on behalf of the higher men genetically programmed by them. Consequently, they only allowed the young generation to return to the promised land. Listen to Numbers 14:29–30 on the subject:

"Your carcases shall fall in this wilderness; and all that were numbered of you, according to your whole number, from twenty years old and upward . . .

"Doubtless ye shall not come into the land. . . ."

But the same strict laws also applied to life in the promised land, according to Joshua 23:7 and 12–13:

> That ye come not among these nations, these that remain among you . . .
>
> If ye . . . shall make marriages with them, and go into them, and they to you:
>
> Know for a certainty that the Lord your God will no more drive out any of these nations . . . but they shall be snares and traps unto you, and scourges in your side, and thorns in your eyes. . . .

After the entry into the promised land, customs and mores were still very strict. Bestiality was only put an end to by new laws made by the "gods."

The "gods" gave the group of men they had mutated precise hygienic instructions, which are reproduced in Leviticus 12:2–4:

> When a man shall have in the skin of his flesh a rising, a scab, or bright spot, and it be in the skin of his flesh like the plague of leprosy; then shall he be brought unto Aaron the priest, or unto one of his sons the priests:
>
> And the priest shall look on the plague in the skin of the flesh: and when the hair in the plague is turned white, and the plague in sight be deeper than the skin of his flesh, it is a plague of leprosy . . .
>
> If the bright spot be white in the skin of his flesh, and in sight be not deeper than the skin, and the hair thereof be not turned white; then the priest shall shut him up that hath the plague seven days.

"Gods," *i.e.*, unknown intelligences, taught the new men to diagnose diseases and—as in this case—to isolate the sick.

Modern instructions for total and scrupulous disinfection were also given. The procedures are described in detail in Leviticus 15:4–12:

> Every bed, whereon he lieth that hath the issue, is unclean: and every thing, whereon he sitteth, shall be unclean.
>
> And whosoever toucheth his bed shall wash his clothes and bathe himself in water . . .
>
> And he that sitteth on anything whereon he sat that hath the issue shall wash his clothes and bathe himself in water . . .
>
> And he that toucheth the flesh of him that hath the issue shall wash his clothes, and bathe himself in water . . .
>
> And if he that hath the issue spit upon him that is

clean; then shall he wash his clothes, and bathe himself in water . . .

And what saddle soever he rideth upon that hath the issue shall be unclean.

And whosoever toucheth any thing that was under him shall be unclean . . .

And the vessel of earth, that he toucheth which hath the issue, shall be broken. . . .

Those are ultramodern sanitary precautions. But who could have had such knowledge in antiquity? Read with my glasses—1969 model—what happened was as follows:

"Gods" came from the cosmos.

"Gods" selected a group of beings and fertilized them.

"Gods" gave the group which bore their genetic material laws and instructions for a civilization capable of development.

"Gods" destroyed those beings who relapsed into their former ways.

"Gods" gave the chosen group an extensive knowledge of hygiene, medicine and technology.

"Gods" imparted the art of writing and methods of cultivating barley.

I have deliberately not taken chronology into account in presenting my version. The Old Testament texts are steps in the construction of a religion; they do not reflect an accurate historical unfolding of time. Comparisons with the literature of other ancient, and older, peoples lead to the conclusion that the events chronicled in the Pentateuch could not have taken place in the period assigned to them by theologists. The Old Testament is a wonderful collection of laws and practical instructions for civilization, of myths and bits of genuine history. This collection contains a wealth of unsolved puzzles, which religious readers have been striving to solve for centuries, but it also contains too many facts that are irreconcilable

with the concept of an almighty, good and omniscient god.

The central problem is: How can an omniscient god make mistakes? Can we really call a god almighty who, after creating man, says that his work is good, but a little later is full of repentance for what he has done?

Compare Genesis 1:31: "And God saw everything that he had made, and, behold, it was very good" with Genesis 6:6: "And it repented the Lord that he had made man on the earth, and it grieved him at his heart."

The same God who had created man decided to destroy His work. And He did it often. Why?

The idea of original sin also seems inconsistent to me. Surely God, who created man, must have known that His creations would be sinful? And if He did not know, how can He be an *omniscient* god?

God punished not only Adam and Eve for the Fall, but all their innocent descendants as well. Yet their children's children had no part in the Fall; indeed, they knew nothing about it. Did God in His rage want to be propitiated by the sacrifice of the blood of the innocent? I doubt whether an infinitely good god has feelings of revenge. Nor do I understand why almighty God later allowed His own innocent Son to be put to death in a gruesome way in order to forgive the whole world for its sins.

When I ask such questions, I am not trying to denigrate or doubt the great religions. I only point out these contradictions because I am convinced that the great God of the universe has absolutely nothing in common with the "gods" who haunt legends, myths, and religions, and who effected the mutation from animal to man.

All this wealth of literary evidence reminds me of a sentence with which Michel Eyquem de Montaigne (1533–92) concluded a lecture to a circle of illustrious philosophers:

"Gentlemen, all I have done is make a bouquet from

flowers already picked, adding nothing but the string to tie them together."

Because I go into things so basically, imploring letters reach me begging me not to take the sources so literally. But our fathers were obliged to take the Bible literally for two thousand years. If they had expressed any doubts, they would have suffered for it. Today it is permissible to discuss problems and debatable points, and so I ask more questions.

Why did God and His angels always show themselves in connection with phenomena such as fire, smoke, earthquakes, lightning, noise, and wind? Bold and imaginative explanations are offered of the kind that can flower into axiomatic proofs in the course of two thousand years of dialectical training. But who has the courage to take the mysterious as reality?

The Swiss professor Dr. Othmar Keel thought that these epiphanies of God ought to be understood as ideograms, in direct opposition to Professor Lindborg who interprets the same events as hallucinatory experiences. The Old Testament scholar Dr. A. Guillaume considers them to be natural events, while Dr. W. Beyerlein recognizes ritual parts of the Israelite religious holiday customs in nearly all the phenomena.

Scholarly explanations? I find nothing but contradictions. But the change in mental climate among the younger generation is refreshing.

Thus Dr. Fritz Dumermuth wrote in the periodical of the theological faculty of Basle (November 21, 1965) that:

> on closer inspection the accounts in question can hardly be equated with natural phenomena of a meteorological or volcanic kind. The time has come to approach things from a new point of view if biblical research is to make any progress in explaining them.

I suspect that the unknown intelligences did not expend their efforts on a new man purely for altruistic motives. Although it is not yet proved by research, one could assume that the "gods" suspected the presence on earth of a material that they needed badly and that they looked for it. Was it fuel for their spaceships?

Many references point to the conclusion that the "gods" received a reward for their help in evolution. Exodus 25:2 mentions an offering, a concept it is easy to miss the point of. Expert German translators assured me that offerings could be taken to mean objects that were lifted up or pushed into something. This is what Moses says in Exodus 25:2–7:

> Speak unto the children of Israel, that they bring me an offering: of every man that giveth it willingly with his heart ye shall take my offering.
>
> And this is the offering which ye shall take to them; gold, and silver, and brass,
>
> And blue, and purple, and scarlet, and fine linen, and goats' hair,
>
> And rams' skins dyed red, and badgers' skins, and shittim wood . . .
>
> Onyx stones and stones to be set in the ephod, and in the breastplate.

So that no mistake occurred when the offering was brought, the list was specified in detail. We find it in Numbers 31:50–54:

> We have therefore brought an oblation for the Lord, what every man hath gotten, of jewels of gold, chains, and bracelets, rings, earrings, and tablets . . .
>
> And all the gold of the offering that they offered up to the Lord . . . was sixteen thousand seven hundred and fifty shekels.
>
> And Moses and Eleazar the priest took gold . . . and brought it . . . for a memorial of Israel before the Lord.

But the god of Israel would scarcely have demanded hard cash for the good he was doing his earthly children. It also appears from the text that the gifts were not intended for the priesthood, for the priests themselves had to collect and deliver the offering. In addition, the proceeds of the collection for the gods was so accurately enumerated that such a niggling reckoning would be unworthy of the real god.

Was the offering the price demanded by the "gods" for the great amount of intelligent knowledge transmitted?

The old sources give the impression that the "gods" would not stay on our planet forever. They carried out their plans and then disappeared for a long time. But they thought out ways of protecting the beings they had created during their absence. As they possessed extraordinary abilities, they probably made use of technology to keep a watch over them.

During the times the "gods" were away, it was a frequent occurrence for a prophet seeking help and advice to call to His Lord—as Samuel describes in Book I, 3:1:

"And the child Samuel ministered unto the Lord before Eli. And the word of the Lord was precious in those days; there was no open vision [*i.e.*, God did not answer very often]."

The new men were not left without protection. Texts speak of servants of the gods who served on earth on higher orders, who protected the chosen ones and guarded the dwellings of the "gods." Were these servants of the gods robots?

The Epic of Gilgamesh describes the dramatic battle between Enkidu and Gilgamesh, and the monster Chuwawa, who guarded the dwelling places of the "gods" successfully and single-handedly. The spears and clubs that Enkidu and Gilgamesh rained on him rebounded harmlessly from the "shining monster," and behind him a "door" spoke in the "thunderous voice" of a human be-

ing. Clever Enkidu discovered the Achilles heel of Chuwawa, the servant of the gods, and managed to disable him.

Chuwawa was neither god nor man. That emerges from a series of texts that James Pritchard published in *Ancient Near Eastern Texts* in 1950. The cuneiform text says:

> Until I have destroyed this "man," if it is man, until I have killed this god, if it is a god, I will not direct my steps to the city . . . O Lord [addressing Gilgamesh], thou, who hast not seen this thing . . . art not stricken with dread, I, who have seen this "man," am stricken with dread. His teeth are like dragon's teeth, his face is like a lion's face. . . .

Isn't that the description of a fight with a robot? Did Enkidu find out where the lever was that turned the machine off and so decide the unequal combat in his favor?

Another cuneiform translation by N. S. Kramer also makes me suspect that a servant of the gods was a programmed robot:

". . . those who accompanied her, the Inanna [the goddess], were beings who know no food, who know no water; eat no scattered meal, drink no offered up water. . . ."

Sumerian and Assyrian tablets often mention such beings, who "eat no food and drink no water." Sometimes these weird monsters are described as "flying lions," "fire-spitting dragons" or "radiant god's eggs."

We also meet the guards left behind by the "gods" in Greek sagas. The story of Hercules tells of the Nemean lion, who had fallen down from the moon and could not be wounded "by any human weapon." Another saga describes the dragon Ladon, whose eyes never slept and whose weapons were "fire and frightful hissing." Before Medea and Jason could carry off the Golden Fleece, they had to outwit the dragon who was covered with flashing

scales of iron and who writhed about, enveloped in flames.

We also find robots in the Bible. What else could the angels have been that saved Lot and his family before Sodom and Gomorrha perished? And what are we to make of the "arms of God" which lent a helping hand in the battles of the chosen people? Moses tells us of an angel who was helpful on God's orders in Exodus 23:20–21:

> Behold, I send an angel before thee, to keep thee in the way, and to bring thee into the place which I have prepared.
>
> Beware of him, and obey his voice, provoke him not; for he will not pardon your transgressions: for my name is in him.

To me it seems only logical that a robot has the name or mind of his constructor "in him," and also that he can never deviate from his programming.

One thing I always found wonderful as a schoolboy was Jacob's experience as told in Genesis 28:12. When Jacob laid down to sleep at night on one of his journeys, he saw a ladder the top of which reached to heaven and had God's angels climbing up and down it. Had Jacob perhaps surprised the servants of God loading goods into a spaceship? Was Jacob's wonderful experience an eye-witness account?

As a crucial test of my audacious claims, my readers should make the experiment of reading "robots," as we understand the term today, for "dragons" whenever they are mentioned in ancient texts. It is astonishing how intelligible the unintelligible suddenly becomes.

I accept the fact that the theories I have expounded will be savagely attacked. Unknown intelligences are supposed to have put an end to bestiality and unnatural sexual practices? A new species of man is supposed to have received the first instructions for a civilized communal

life from intelligences? Unknown intelligences, after carrying out their task, are supposed to have vanished into the universe again, but to have left behind overseers of the new men? And these overseers are supposed to have been robots or automatons?

I try to recognize a reality that once existed behind myths, legends, and traditions. Here are some incontrovertible facts.

Tibetans and Hindus called the universe the mother of the terrestrial race.

The natives of Malekula (New Hebrides) state that the first race of men consisted of descendants of the sons of heaven.

The Red Indians say that they are the descendants of the thunderbird.

The Incas believed they descended from the "sons of the Sun."

The Rapanui trace their origin back to the birdmen.

The Mayas are supposed to be children of the Pleiades.

The Teutons claim that their forefathers came with the flying *Wanen.*

The Indians believe that they descend from Indra, Ghurka or Bhima—all three of whom drove through the heavens in fire ships.

Enoch and Elijah disappeared forever in a chariot of fire.

The South Sea islanders say they descend from the god of heaven, Tangalao, who came down from heaven in an enormous gleaming egg.

One core is common to these genealogical stories: "Gods" came, chose a group whom they fertilized and separated from the unclean. They imparted all kinds of modern knowledge to them and then disappeared for a period or forever.

Karl F. Kohlenberg described what we are now left with in his book *Völkerkunde* (Ethnology) :

". . . the riddle of the gods, the riddle of the origin of man, a chaos of traditions, the real meaning of which our limited erudition is still unable to explain."

May I be allowed one more important allusion to the "riddle of the gods." In my first book I mentioned the theory of relativity, the basic rocket formula, and time shifts on interstellar flights. We have seen that time for the crew of a spaceship traveling just below the speed of light passes considerably slower than for those who stay behind on the launching planet. Should we regard it as coincidence that the oldest writings, quite independently of each other, constantly emphasize that the units of time applicable to the gods are different from ours?

A human generation was only a moment to the Indian god Vishnu. Each of the legendary emperors of Chinese prehistory was a heavenly ruler, who drove through the sky with fire-breathing dragons and lived for 18,000 terrestrial years. Indeed, P'an Ku, the first heavenly ruler, traveled around in the cosmos 2,229,000 years ago, and even our own familiar Old Testament assures us that in the hand of God everything is "a time and times and the dividing of time" (Daniel 7:25), or as Psalm 90:4 so magnificently expresses it:

"For a thousand years in thy sight are but as yesterday when it is past, and as a watch in the night."

12

Questions and Still More Questions

WERE outward signs of age-old traditions misunderstood during past millennia?

Were our attempts at interpretation moving in the wrong direction?

Have we made what has always been and still is before our eyes more complicated than it really is?

Were straightforward practical and technical directions given a distorted interpretation in religious and philosophical mysteries?

Are the traditions that have accumulated in myths and religions meant to be far less mysterious and far more practical than was believed for millennia?

Will there be time for us to learn what the scanty relics of human prehistory have to tell us before the small amount of extant material is finally devoured, scattered, and destroyed by bulldozers?

When will archaeologists make a cut a kilometer long through the sandstone cliffs called the Extern Stones in the Teutoburger Forest?

When will a large-scale expedition be completely free to excavate the mystery-enshrouded sites around Marib? When will underwater radiation investigations with modern apparatus be made in the Dead Sea?

When will archaeologists follow up the long-overdue idea of sounding the Chephren Pyramid by doing the same thing under the numerous other pyramids?

When will diggers remove the top layer at Tiahuanaco so that we may learn what secrets are still hidden below it?

How long will lone wolves thirsty for knowledge have to dig in the Sahara without any help or support? When will helicopters be put at their disposal for even short periods to help them investigate the vast territory?

When will a chemical trace analysis of the plain of Nazca finally be carried out?

For how long must amateur idealists struggle to free the ruins in the jungles of Guatemala and Honduras?

When will deep excavations be made at Zimbabwe, Southern Rhodesia?

What international organization is ready to finance a cartographical institute that will finally clear up the specific geographical and geodesic connections that exist between the remains of mysterious primitive cultures on different continents?

Will an international organization, possibly UNESCO, ever reach the decision to have the thousands and thousands of rock paintings and cave drawings all over the world cataloged?

Is it not possible that the keys to the kingdom of heaven are hidden in many places on earth?

Were we smitten with blindness for thousands of years?

And are we still?

Actually the ancient "gods" were always telling us that we were deaf and blind, but that one day we should know the truth.

From time immemorial all religions have promised that we would find the "gods" if only we looked for them, and that once we have found them, we would go to heaven and eternal peace would reign on earth.

Why should we not take this promise literally?

Perhaps we are making a mistake when we interpret the concept "heaven" as another-worldly, never-ending state of bliss. Perhaps "heaven" simply meant the "universe"?

Surely we ought to seek the "gods," and the messages they left, here on earth, instead of hoping for them somewhere in an indeterminable eternity?

May not these "gods," whom mankind has longed for and prayed to in all ages, have left behind technical instructions which would enable us to meet them in the universe?

Since the beginning of human history, wars have been and are being continuously waged somewhere or other on our planet. Did the "gods" promise peace on earth because they knew that once the inhabitants of earth had felt the full impact of seeing their tiny planet from outer space, they would realize that all terrestrial squabbles were utterly futile?

Do the "gods" hope or expect that once earthly beings get to know space, they will lose the national consciousness they have only assumed and instead consider the infinite cosmos as the universal motherland?

From the perspective of the universe all men will be simply inhabitants of the third planet, a minor sun on the edge of the galaxy—and not Russians or Chinese, Americans or Europeans, black or white.

Could mankind make its age-old dream of going to heaven come true if it took up the promise of the "gods"? That the "gods" promised men the possibility of return to the stars is implicit in Genesis 11:6:

(The Lord is speaking to the people) ". . . and this they begin to do: and now nothing will be restrained from them, which they have imagined to do."

And when one day the first contacts with intelligences on other planets are made, we shall soon learn to under-

stand one another in one language as in the time of the Tower of Babel. The 2,976 languages that are spoken on earth today can still be preserved as country dialects. But scholars from all countries and on all planets will exchange their knowledge in *one* language.

But then our familiar and carefully preserved world picture will collapse and the younger generation of the space age will erase from its consciousness the last nationalistic feelings, which will have become meaningless.

For that reason alone, I think, it is our duty to examine both apparently fantastic interpretations of traditional old texts and factual stone evidence with the greatest scientific care. Once we have absorbed all the messages left behind by the "gods," flesh and blood encounters with astronauts from distant stars will lose their terror because we shall know that these beings have something in common with us: They, too, experienced the day of their creation at some point in time.

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PATHWAYS TO THE GODS

The Stones of Kiribati

ERICH VON DÄNIKEN

Translated by Michael Heron

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Letter to My Readers

'You can't blow dust away without making a lot of people cough.'

Prince Philip,
Duke of Edinburgh

Dear Readers,

A brainy man, whose field is our reading habits—I think it was Professor Alphons Silbermann—discovered that a 'reading generation' lasts four years. Work it out for yourself and I think you'll find he's right. From the age of two to six, brightly coloured picture books form the first generation of readers. Then come fairytales and tiresome school books, until the age of ten (nowadays!) when children start to read comics and in the case of smart girls and boys adventure and travel books and stories about animals. Early developers, at the age of about 14, use interesting factual books and the whole spectrum of novels as reading material. At 18 begins the first predilection for specialised subjects, which may last a lifetime or alter the rhythm of the reading generations, depending on a person's profession, private life, hobbies or on special events.

If I reflect on this rhythm, three and a half generations of readers have grown up since the publication of my first book in 1967. Anyone who was 16 years old in 1967 is 30 today. Perhaps we have already met, dear reader, perhaps you are one of the great mass of my public who can be relied on to be there when a new book by me comes out nearly every two years.

But of course many of my new readers come up against it when I confirm my 'old' theories in a new book with brand new items of knowledge. That is the fate of all hypotheses, even the most scientific of them. They must be developed. And I admit that this puts me in a dilemma every time. My starting points are clear to my faithful readers, but what sort of basic data should I give my new readers, so that they have firm ground under their feet amid all the talk of heaven and earth? I don't want to bore my old readers, but neither do I want to send my new adherents into the forest without a compass.

So I shall simply state in 'telegrammese' what I have been claiming for 14 years.

The world was visited by alien beings from space in prehistoric times. They are known as extraterrestrials in the literature on the subject.

The extraterrestrials created human intelligence by altering the hereditary material of the still primitive inhabitants. Scientists would describe it as mutation, an artificially produced change in the hereditary process. In my view the origin of human intelligence is not a chance result, not a winning ticket in a lottery with milliards of possibilities, but a planned intervention by alien beings from space.

The aliens' visits to earth also produced the oldest religions and the creation of myths and legends at the heart of which the facts about real events that took place in the past are handed down.

If these briefly sketched hypotheses had not been highly explosive, they could not have set off a global controversy. In fact I was sawing unashamedly at the foundation pillars of the traditional mental edifice. Equipped with knowledge that I had acquired over 14 years I was constantly crossing the frontiers between the territories earmarked by archaeologists, ethnologists, space-travel specialists and, inevitably, theologians. I freely admit that I had to tread on a lot of toes during my wanderings. And also that I was led into error in some special cases. No doubt about that.

But, and I found that out on my travels, there is a lot in my hypotheses. Books attacking me were published in every language in the world. A whole phalanx of authors ganged up to assail my global success, sometimes hitting below the belt. Drowning people hit out in all directions. I am tolerant about this. On the other hand an increasing number of books are appearing that take my theories seriously and even welcome them. Some of them are by well-known scientists.

The subject had global reverberations almost unparalleled in our century. It was not only my films *Memories of the Future* and *Message of the Gods* which contributed to this, the American super-films *Star Wars* and *The Empire Strikes Back* were also fertilised by my ideas. My faithful readers met situations on the screen that were familiar to them.

The pop group Exiled (RCA PL 25297) has hit the bull's-eye with their latest hit.

> It was thousands of years ago when a mighty armada of spaceships crossed a sea of stars. They were searching for planets suitable to continue and develop their life. The discovery and settlement of the planet earth also served this goal. We are only just beginning to decipher the descriptions of that fantastic event . . . And from now on we shall have a better understanding of whatever may happen on earth and in heaven . . .

The author, who is definitely 'not guilty' of the text, is delighted that his theses are so popular that they have passed into pop music. It makes me confident that the younger generation is wide open to futuristic ideas.

Dear readers, let us listen to the prophet Ezekiel, who lived *c.* 592 BC 'Son of man, you dwell in the midst of a rebellious house, who have eyes to see, but see not, who have ears to hear, but hear not.'

As for me I shall keep on blowing the dust away, even if a lot of people start to cough.

I invite my readers, old and new, to accompany me on some of my travels. They will learn much that is new and also read about the hardships a 'Sunday research worker' encounters on his travels round the world.

Sincerely yours,
Erich von Däniken

1 Journey to the Kiribatis

'Surprise and wonder are the beginning of understanding.'

Ortega y Gasset.

If it had not been for this letter from Cape Town, South Africa, I should never have dreamed of going to the Kiribatis:

Dear Mr von Däniken,

I know that you are a man with a lot of commitments and therefore I will not waste your time but come to the point.

I have been intending to write to you about some definite evidence of 'gods that came from the sky'. During my time as a missionary in the Pacific, I was shown the graves of two giants who, the locals told in their folk-tales, came from the skies. These are well-preserved graves and each is approximately 5 m long. There are also many footsteps fossilised in the rocks and these are so numerous as to make photography quite simple.

There is also a 'stone compass' and a site where the folk-tales say that the 'gods' landed. This place is most interesting because it is completely devoid of plant life and is in a perfect circle.

If you are interested I would be pleased to follow it up and give you more information; if, on the other hand, you know all the evidence already, I shall not be offended not to hear from you.

With every good wish and again many thanks for hours of good reading.

Yours sincerely,
Reverend C. Scarborough

I received this letter at the end of May 1978. A Protestant parson who was receptive to my ideas?

I thanked him by return, asking for the information he offered and also whether there were any photographs of the mysterious places or literature about them. Naturally I

offered to pay any expenses he might incur. A month passed before Reverend Scarborough answered:

Dear Mr von Däniken,

Thank you for the reply to my letter. Firstly let me explain that I have no need of remuneration. I am only too happy to help you in your quest for information.

You inquire as to available literature. Unfortunately it is almost non-existent, and on the subject about which we will be corresponding there is no literature whatsoever. More's the pity.

I appreciate that you must hear news from 'cranks' all over the world, so it might be a good idea to establish my credentials from the start.

I am a Congregational minister in Sea Point, South Africa. Before coming to take up this position my wife and I and two children were missionaries in the Kiribati Islands (formerly Gilbert Islands) South Pacific under the authority of the London Missionary Society. We spent a period of three and a half years there and could speak the native language fluently. We travelled extensively throughout the 16 islands and spent many months on each island. We became aware of the strange and inexplicable ancient history of the islands very soon after learning the language.

The first thing that struck me was the fact that the islanders had two names for people. They themselves they referred to as *aomata*, meaning simply man in the plural. Anyone with a white skin and tall was referred to as *te i-matang*, which is translated literally as 'man from the land of gods'. As we got to know the islanders better we found that this difference between them and foreigners existed on all the islands.

As you may wish to investigate the matter yourself at some point, I must tell you that the islanders can be very uncommunicative to strangers unless you adopt the right approach. They are very religious. They are ruled by the Protestant and Catholic native ministers to a great degree and unless you make your peace with the ministers you might as well stay at home.

Be seen to mix with the islanders themselves and not so

much with the government and European community and you will make headway. I am sure that you are a past master of all this kind of diplomacy.

The letter contained instructions about where to find the giants' graves and a description of the compass stones in the south of 'an' island, which, the missionary discovered, had lines scratched on them giving the bearings of far distant goals. It was also interesting to hear that the stones must have been transported from elsewhere, because that kind of stone does not exist on the island. My correspondent had this to say about the 'landing site of the gods':

> On this point I must give you two possibilities as I confess to have forgotten on which island it was. It was either Tarawa North or Abaiang, both of which are close enough to see one island from the other.
>
> If my memory serves me correctly, it was Abaiang. There the local *tabunia* (witch-doctor) keeps watch over this strange site. It is known to the islanders and they will readily tell you where the open site is to be found. It is a part of the island with dense undergrowth. The islanders go there secretly when the ministers are not watching to make their offerings to the gods.
>
> In this case you will most certainly need the help of the local *tabunia*. He will lead you as he did me through the bush until you come to the circle. There nothing grows, not a weed or a tree, and there is no living thing to be seen. He will tell you that anyone who walks over the large open circle will soon die. Why? Radiation or what? It is interesting when you are there to note that trees that have begun to grow leaning towards the circle have turned in their growth and leaned away from this open area. Nothing grows in the centre of the circle. When the Resident Commissioner visited the spot in 1965, he said to me that it must be radioactive. But radioactivity on a coral island? Again it is referred to in folk-lore as the landing place of the gods.

This minister, miles away and unknown to me, had got me going. I was champing at the bit: where were the Kiribatis?

There are four big atlases on the shelves of my library, but none of them mentions the Kiribatis. Three famous reference works, the *Encyclopaedia Britannica*, Brockhaus and Larousse tell me that there are 1,200 kinds of flea, but they've never head of the Kiribatis. Well-informed books of the seventies still do not mention them, these Kiribati Isles floating in the Pacific. They do exist, for I was there, and they are interesting fleas in that infinite sea.

As my pious informant had lived on the Kiribatis, they must exist. I asked everyone I could think of: 'Have you heard of the Kiribatis?' The answer was always the same blank look, followed by 'Kiribatis?'. Finally I wrote to Cape Town and asked my clerical friend:

> Where are the Kiribatis? How does one get there? Are there any flights?
>
> Where can I stay? Are there any hotels?
>
> What is the currency used on the islands?
>
> What sort of presents should we take with us for the priests, magicians and other local inhabitants?
>
> Should we look out for any special dangers such as snakes, poisonous scorpions or spiders?
>
> Are you still in touch with friends or acquaintances there? Could you give me the names of people I could get in touch with and to whom I could mention your name as a reference?

Reverend Scarborough answered promptly and helpfully. The mist around the Kiribatis was cleared away.

They consisted of a group of sixteen islands forming part of the British Crown Colony of the Gilbert Islands until they obtained their independence in 1977 and the name was changed. They float in the Pacific Ocean, have an area of 973 sq km and a population of some 52,000 Micronesians.

One can fly to the main island of Tarawa, with a port and the seat of government, from Nauru, the island republic, or Suva, the capital of the biggest Fijian island.

As gifts the Reverend recommended modern multi-purpose pocket-knives for the community leaders, cheap sunglasses for the fishermen and aspirin for the priests and women.

Reverend Scarborough wrote comfortingly that there were

no snakes or spiders, and although there were scorpions their bite was no worse than a wasp sting. The letter warned:

> The real danger lies in the sea. Never bathe in the sea, even if the islanders tell you otherwise. Sharks are a real danger to every swimmer, as are other forms of submarine life. I can't warn you too strongly: never bathe in the sea!

When I look back, I know for certain that we should have gone swimming if it had not been for this emphatic warning.

My unknown well-wisher invited me to get in touch with his old friends, the ministers Kamoriki and Eritaia, and said they were nice men who would certainly help me. Likewise Captain Ward of the ship *Moana Roi*, with his deep knowledge of the islands, could be helpful, since Ward was familiar with local legend and the islanders' holy places.

Contrary to the popular belief that I am a rich man who can make such journeys simply by putting my hand in my pocket, I always plan to visit several places in a particular region so that expenditure on travel does not exceed the potential income. Only too often, advance information turns out to be false on arrival, the fantasies of cranks, as the Reverend wrote, and then time and money are wasted. However, in 1980 a useful combination came up. The Seventh World Congress of the Ancient Astronaut Society was to take place in the summer in New Zealand. The AAS is an international non-profit-making organisation which discusses the subjects of my books.

New Zealand! That was half the cost of reaching my goal, the Kiribati Islands.

I dictated a letter to Reverend Kamoriki on Tarawa. Early in 1980 I had an answer written in a shaky hand which indicated that the parson was quite an old man. I read that Captain Ward had been pensioned off some years ago and returned to England, but Kamoriki and his family would be glad to receive me and my friends, and naturally we must be his house guests. That sounded good. Feeling very grateful I deciphered the postscript in tiny spidery writing: 'Have you got an entry permit?'

My secretary Willi Dünnenberger and I set the telephone wires humming. Who would give us a visa? During the last

ten years we have travelled to the ends of the earth, but there were always embassies and legations in Berne representing the goals of our daring journeys. The Kiribatis are a blank spot in the diplomatic landscape of Switzerland. An official in the Ministry for Foreign Affairs gave us a tip: 'Phone the Australians or the English.' The Australian Embassy told me that they did in fact trade with the group of islands and gave them development grants, but were not responsible for visas. In London the Office for Pacific Affairs was able to tell us that Swiss nationals could obtain an entry permit on their arrival at Tarawa, provided they undertook not to stay longer than three months and could produce a return air ticket. Three months! It wasn't as if we were going to build huts on the Kiribatis!

We got our kit ready: four cameras with cases for object lenses, films, a small Geiger counter, a first-aid case, pocket-knives, sunglasses and aspirins. As always we tried to cut down as much as possible, but there was still a mountain big enough to make two men weak at the knees. We were in despair when we were saved by a tall young friend, Rico Mercurio, one of those rare people for whom nothing is too much trouble and who does not watch the clock when something important needs doing. Rico cuts diamonds and even more valuable jewels for a well-known Zürich firm. They are used to adorn the watches which the oil sheikhs give to the women in their harems. Rico said that after two years without a holiday a break in the Kiribatis, wherever they were, would do him good. We told him it would.

On 3 July 1980 our fully laden trio flew to Singapore via Bombay on a Swiss Air DC 10, flight 176. There we changed to Air New Zealand flight 28 to Auckland. There are 25 long hours of flying time between Zürich and Auckland.

These long-distance flights are horrible. At first you read a pile of newspapers you haven't had time to catch up with. More out of boredom than hunger you gulp down the rich meals. You clamp the headphones over your ears, you try to sleep, but your time rhythm is out of step and you can't. We watch the film of Agatha Christie's *Death on the Nile*, but even that does not kill time. At a flying speed of 850 km per hour you don't really notice anything, you have no point of reference—below there is nothing but water, then the

Australian desert and water again. The crew has changed three times since Zürich. The passengers are still draped in their seats, fed at intervals and supplied with information from the cockpit. Time stands still. Why on earth do reactionaries run the supersonic Concorde down? Why is the American super aircraft SST, planned so long ago, not being built?

We play a little game on our own. We think up things that could be offered to the passengers. Electronic games like Space Invaders. Or maybe occupational therapy—like embroidery or sewing mailbags. That would be something. And with the proceeds from these in-flight labours air fares that have risen to astronomical heights under the OPEC dictatorship might gradually be reduced. At a height of 11,000 m we even thought of a casino. *Rien ne va plus*. And in fact after a long-distance flight like this, nothing does.

I love New Zealand. It resembles the green landscape of the Swiss Jura with its meadows and spotlessly clean villages; there are hills and real alps, mountain farms, climbing tours, ski-lifts, limpid mountain lakes—just like home. But New Zealand has something we cannot offer—the sea. If anyone wants Switzerland plus sea, they should emigrate to New Zealand. Owing to the constant breezes from the Pacific, the air here is purer and tangier than in Switzerland in spite of the 40 million sheep. Forty million sheep and only 4 million New Zealanders. Let us hope that one day the sheep will not take over the government, following the revolutionary motto 'Four legs good, two legs bad' in George Orwell's *Animal Farm*.

Our onward flight from Auckland to the island of Nauru with Air Nauru was planned for 13 July. The fact that the flight was delayed for 24 hours had nothing to do with the number 13. The oddest airline in the world does not stick to timetables. We waited. We were tired and often rather hungry, a state explained by the consumption in the airport restaurant of a gruesome speciality of the country—spaghetti sandwiches. White worms in sticky sweet tomato sauce coiled inside two slices of cottonwool toast. They don't taste any better if they're heated. We waited and at hourly intervals swallowed this frightful creation of the New Zealand cuisine,

New Zealand! Before leaving this beautiful country for Nauru we were delayed for a seemingly interminable day, for Air Nauru seldom sticks to its timetable.

which is outstandingly bad in general. Songs from *The White Horse Inn*, whose redoubtable landlady by the Wolfgangsee would have sent all the cooks in the country packing, streamed from the loudspeakers for the umpteenth time during our 24-hour wait.

On the flight from Auckland to Nauru there were three passengers on board the Air Nauru Boeing 737, Rico, Willi and I plus nine members of the crew. Air Nauru operates with two twin-jet Boeing 727 passenger aircraft and two triple-jet 737s. The President of the Republic of Nauru is reputed to have said that Air Nauru was needed to fly in phosphate contracts, cheques, engineers and repairmen, but if a 'normal' passenger wanted to go along, he would be allowed to. That is certainly a rare occurrence, for the rich island has no tourism.

With its 21 sq km Nauru is an islet that lies just below the Equator on longitude 167° east of Greenwich. Nauru is surrounded by a reef that descends steeply into the open sea and consists of coral containing phosphate deposits. The wealth of this tropical island is based on phosphate. All 6000 in-

habitants make their living directly or indirectly from phosphate, which is claimed to be the best and purest in the world. Dusty conveyor belts rattle down to the harbour with the indispensable fertiliser which cranes load on to freighters bound for Australia and New Zealand. According to the Annual Report of the Nauru Phosphate Corporation for 1979, reserves will last for another 14 years, although in that year alone phosphate to the value of 79,444,463 Australian dollars was sold. Given the present volume of exports, the phosphate deposits could be exhausted in five years. Then the island's wealth would come to an end. The export of coconuts and vegetables brings in very little.

A few years ago the government had the only acceptable hotel, the Meneng, built for Air Nauru pilots, engineers and businessmen in the Phosphate Corporation so that travellers used to better accommodation would at least have somewhere cool to stay. So the first thing that hits your sweaty face at the entrance is a blast from the air-conditioning.

The waitresses in the dining-room look serious and dignified. They bring you a menu, the front page of which offers rather simple fare: baked fish with sweet potatoes and corn on the cob with melted butter. But on the back there is something sensational: three Australian and two New Zealand wines, the Château Mouton Rothschild, 1970 vintage, for 35 Australian dollars, about £22.

We thought it was a joke or a misprint. This 1970 vintage from Bordeaux was the wine of the century. In Switzerland you cannot lay your hands on it for less than 400 francs: in first-class restaurants you would have to pay at least double that. Château Mouton Rothschild is a drink for sheikhs who ask Muhammad to avert his eyes for a moment when they transgress his ban on alcohol. It is no drink for ordinary mortals.

Rico said, 'Friends, this is our last evening before the Kiribatis. We don't know what awaits us there. I'll stand you a bottle.'

The waitress was flabbergasted when she saw Rico's finger pointing to the great wine. She could not move. As Rico's finger was almost boring a hole in the menu and he gave the terrified girl a look that was almost as penetrating, she trotted off behind the buffet and whispered to her pretty colleagues who began to giggle and stare at us.

The wine waiter sneered as he took the cork out. We were already beginning to suspect its contents when he handed us the costly vessel—bottle is an unworthy description in this case—a genuine 1970 Château Mouton Rothschild, numbered and with a drawing by Marc Chagall on the label. The Rothschilds always decorate their 'Mouton' with a drawing by a famous painter.

Whenever we raised our glasses the watching girls whispered and giggled. I stood the second bottle. This wine was the purest nectar, a drink fit for gods. Behind the merry wives of Nauru an Asiatic cook bobbed up, his hearty laughter making his white chef's hat wobble. The maidens squealed as if we were unwittingly drinking castor oil that would give us a busy time that night. We checked our clothing to see if there was something wrong or ridiculous about it. We were wearing correct tropical gear.

The Air Nauru pilot who had flown us over came into the room. As he spoke the local language, we asked him to find out why we had been laughed at for two hours. He nodded and strode—every inch an aviator—to the circle of clucking hens and soon returned to our table with the result of his mission.

'They're laughing, gentlemen, because they have found three crazy foreigners stupid enough to drink such an old wine and pay 35 dollars for it into the bargain. Bye-bye.'

We were not ashamed of our stupidity. Willi ordered the third bottle and I wrote the numbers of the labels in my notebook, knowing that this would be my first and last encounter with that unforgettable 1970 Château Mouton Rothschild: 242/443, 242/444 and 242/445.

We had to tear Rico away. Although we could not speak the language, he had made unmistakable visual contact with a beautiful waitress, an Esperanto understood by men and women everywhere.

The Air Nauru Boeing 727 was supposed to fly to Tarawa, the main island of the Kiribati group, at 6.30 a.m. on 15 July, but it took off an hour late. We were going to learn on more than one occasion that time over there has a different value from that of our own hectic world.

At seven o'clock we were in the little airport at Tarawa surrounded by coffee-brown and black men and women who

were starting the day in a cheerful and leisurely way. They took no notice of us. No one grabbed our cases from us, as they do in South American and Arabic countries, no one dragged us towards a taxi shouting volubly. In the equatorial morning sunlight our presence seemed pretty superfluous.

In search of the right address for my mission, I turned to a young man who was idly contemplating the motley throng. Like the rest of the islanders, all he wore was the *tepe*, a brightly coloured rectangular piece of cloth, round his loins.

When I spoke to him he smiled and said in a guttural voice, *'Ko na mauri!'*

I did not realise then, nor even guess, that during that very morning, *ko na mauri*, thou shalt be blest, would become part of our vocabulary.

The islander asked, 'You speak English?'

The language, a relic of the English colonial days, helped me out of my difficulty, but in answer to my question about taxis he replied sympathetically, 'No taxi here.'

I asked if there was a hotel. Reverend Kamoriki had not answered that question. With an embarrassed grin, the boy said there was no hotel, only a government guest-house. 'Wait here,' he said and set off at a trot barefoot, the ingrowing toenails on his big toes obviously causing him no pain.

The Air Nauru aircraft had flown on. The crowd who had come to meet relatives had dispersed. A few locals who apparently intended to spend the day here turned their curious gaze on us and offered to help. We waited for our boy, who finally trundled up in a small clapped-out lorry. He drove us to the Otintai guest-house.

A remarkably nervous man, his high forehead pouring with sweat which he wiped clear of his eyes with a large blue rag, was daydreaming behind the reception desk. In easily intelligible English he explained that the government would not decide whether the hotel would strike until that afternoon and that in the meantime he could not accept any guests owing to the shortage of staff. I cautiously asked what the strike was about.

'People want to work longer,' he said wearily and wiped a stream of sweat from his eyebrows.

'People want to work longer?' I asked, my ears still ringing with demands for 30- and 35-hour weeks, for 7 and 8 weeks'

On the islanders' doorstep nature provides everything they need for living, free of charge. The closely packed coconut palms supply material for building houses and guarantee their basic foodstuffs.

holiday and retirement on pension at the maximum age of 60. 'Work longer?' I repeated.

The nervous gentleman explained that wage earners in the Kiribatis were pensioned off at the age of 50 with a reduced income. Those now on strike wanted the pensionable age to be set at a minimum of 55, for on none of the islands did the depressed economic situation offer the possibility of supplementary work. There was no industry, while copra, island handicrafts and phosphate from the island of Banaba were the narrow basis of the export trade. The only thing there was plenty of was manpower. After the first impressions on my arrival, I wondered automatically why the islanders wanted to work longer. Everything necessary for a peaceful life was supplied virtually free by nature: fish from the sea, palm trees for building huts in the permanently hot climate and nourishing fruit. Since these idyllic islands had been blessed with officials and administrations, since they had had to export and adopt the profit motive, the bacillus of that

occidental sickness, the strike, had crept in. No, civilisation does not create happiness.

It was at least obliging of the sweaty black gentleman to let us dump our luggage in a corner behind his desk. It would have been embarrassing to descend on the pastor with bag and baggage.

The island of Tarawa is a typical atoll, a horseshoe-shaped coral island which from great depths protrudes only a few metres above sea level. Between the north and south parts of Tarawa lies a lagoon connected with the sea by natural channels. As the terrain is so frequently penetrated by water, the north of the island can only be reached by boat and is almost uninhabited, whereas the south is fairly thickly populated. That was where our little van jolted over the narrow strips of coral terrain.

From our seat high up in the back of the lorry we could see only a few stone buildings—government offices, churches, the hospital and a few private houses belonging to the better-off islanders. Palm trees provided the material for the indigenous method of building: bungalow-type huts of palm trunks and fronds. Often they have only one room. The wealthier permit themselves two or three rooms. The 'communications centre' is always the living-room where people gossip, eat, sing and sleep and even beget children.

In spite of the early hour and the pleasant breeze created by our speed, the humid equatorial heat made us pour with sweat. Our shirts and trousers clung to our bodies. Plumes of smoke from open fires spiced the close salty air. Our vehicle wound its way along a narrow road between palms, breadfruit trees and huts. The islanders waved to us; children ran alongside our wheezing lorry. The island of Tarawa seemed to be a haven of peace, but there was a strike on.

On our right we could see the calm waters of the lagoon, on our left lay small villages, while right behind them the huge Pacific rollers thundered against the reef as they had done since time immemorial. There were no seasons here. Every day the sun rose and set at the same time.

Our boy stopped the lorry outside the small unplastered houses. Pink curtains waved in the open windows, something we never saw anywhere else.

'That is Reverend Kamoriki's house,' said our driver.

One old lady and two younger women were watching us from a window. They disappeared like ghosts when we looked at them. The house had no doors, only open entrances, and as the pink curtains were drawn we could see into the interior: on the right, in the largest of the three rooms, stood a large mosquito-net-draped bed that had seen better times; the other two rooms appeared to be unfurnished. Our driver had gone into the house and was talking to one of the young women. A sad expression came over his normally cheerful face. He came up to us slowly and he obviously did not relish telling us what he had just heard.

'Reverend Kamoriki is dead!'

That was a shock. The Reverend was dead. I remembered the shaky handwriting, which was that of a very old man. The Reverend Scarborough also mentioned in his letter the name of his colleague, Eritaia. I asked about him. Yes, said our guide, Reverend Eritaia lived in the other house, but was a very, very old man, who certainly could not receive any visitors. Then he asked if the children of the two clergymen could not help us and led us into the courtyard of the adjoining house.

A coffee-brown man of about 35 with the thick black hair characteristic of the islanders crouched on the ground on a coconut mat. When he realised that we were there, he stood up and said with the ghost of a smile, '*Ko na mauri*.'

'Good morning, sir,' I replied.

Bwere, Eritaia's son, understood and spoke English very well, so that I was able to tell him about my correspondence with the Reverend Scarborough, the letter from Reverend Kamoriki and my mission, in particular that I was interested in the mythology of the island and had made the long journey to examine the places with their hidden secrets.

Bwere gave his visitors a long deliberate scrutiny: Willi and Rico who stood behind me sweating, and me, politely explaining my mission. After his inspection he asked, 'How long do you mean to stay on the island?'

We drove past villages behind which the giant Pacific rollers have been thundering on to the beach since time immemorial.

Beautiful girls sit outside their huts under the palms and prepare dried fish for the next meal.

Without thinking I answered, 'About a week,' and thought to myself that we could prolong our stay if necessary.

Bwere lowered himself to the coconut mat. With a superior smile he re-examined us closely and then burst out laughing.

'A week! You're crazy. You must come from a strange country to take such a cavalier attitude to time! You want to investigate a serious subject and you've only got a week! You need months to visit our islands, which are scattered widely.' He looked at us crossly. 'Go and loaf in the sun for a couple of days and come back when you've got more time . . . In any case, you can't do anything during the strike; there's no hotel room at the Otintai and no means of transport.'

I was cross with myself, with our frantic life, the tyranny of deadlines, the professional, family and financial pressures in which we hang like spiders in a web. Bwere was right, but we *were* there and it had been no short joyride. Nothing was going to stop us seeing and examining the goal of our journey, seeing it in person and checking it, in spite of the strike and although we could not spend months there. Reverend Scarborough had warned me to be very diplomatic when dealing with the islanders. I made a quick mental review of everything I had said so far. Had Bwere Eritaia been upset by my abrupt answers? Perhaps the islands' secrets were under a taboo and they were protected from the eyes of strangers. I tried diplomacy.

'The little we have so far seen on this marvellous island has made a deep impression on us. Your countrymen are friendly and helpful. We're sorry we can't stay here long. And we don't want to give any trouble. It would mean a lot to us even if we knew whether there was a school with a library which would tell us about the local mythology. We should be most grateful.'

Bwere, who had been so prickly, positively smirked. He himself was the government cultural official; the library and archives were under his care. He would open them for us and would also help us in our search for local lore.

The first and presumably the easiest stage on the way to our goal had been reached. I thought of some islets in the Micronesian Caroline Islands, north of the Equator. They had natural landing grounds on which a small propeller-

driven aircraft could land. I asked if there were such landing strips on the Kiribati Islands.

With visible pride Bwere told me that they existed on the larger islands and that Air Tungaru, a small airline, flew a regular service between the islands. But, he went on, at the moment the machines were grounded because of the strike. I could ask the head pilot if he felt brave enough to break the strike, but he did not hold out much hope.

A beautiful woman came from the house and put three coconuts down in front of Bwere. He opened them with a skilful blow of his machete and gave us the half nuts full of refreshing juice. It is amazing how many things can be made from the empty shells—the white flesh is rich in vitamins. Drinking vessels, plant pots, lamps in which glimmering wicks float in oil and even brassières for adolescent girls.

Bwere gestured to us to sit down on the coconut mat. He gave us a lesson in local history. He and his fellow countrymen were Micronesians, but their language was related to Melanesian.

Bwere said that there were various theories about the origin of the Kiribatis. Some scholars claimed that their forefathers came from Indonesia and had interbred with a dark-skinned original race below the Equator, others said that they originally came from the South American continent, while still others traced their origins directly to divine beings who had visited the island in former times. I pricked up my ears.

Magic formed part of the Kiribatis' life, said Bwere. Although he was the son of a parson and a practising Christian, his eyes assumed a cryptic, almost fanatical look, but he did not elaborate on this vague statement. I did not pursue the matter so as not to destroy his confidence. Besides I had read all the relevant literature before my journey and there had been a lot about magic in the islands.

At the beginning of this century Arthur Grimble lived in the colony as envoy of the British Crown. He learnt the Kiribati language, shared their customs and usages and was so accepted by them that he was admitted to the exclusive sun clan Karongoa, a kind of secret lodge, which was a great honour. I read Grimble's book[1] and also his daughter Rosemary's[2] who published a scholarly edition of her

Teeta, the son of Reverend Kamoriki, was our guardian angel on the roads and in the steaming jungle.

father's posthumous papers. Of the islanders' magic rituals, which our friend Bwere did not mention, she wrote:

> There is one incantation for the protection of coconuts, another for help to steal one's neighbours coconuts and yet another to prevent theft; there is a formula to conjure poison into one's enemy's food and another to prevent it. Then there is *wawi*, fatal magic, and *bonobon* to make it ineffective.

Today six churches are trying to make the islanders renounce their magical practices. Catholics, Protestants, Adventists, Mormons, the Church of God and Baha'i are competing for the right way to save the Kiribatis' souls, for their manpower and the little money they possess.[3] They take over everyday life, root out customs and usages preserved for centuries, encourage unrestrained conception to increase the numbers of their flock, compete to build the biggest churches.

By dark hints, Bwere himself did not seem to find this development altogether favourable for his countrymen.

Suddenly a barefooted giant in tattered white shorts appeared in our midst. A massive muscular chest was beating under his T-shirt with the inscription Teeta. He smiled at us like a child and shook hands with everyone at the first break in the conversation.

'Ko na mauri. I am Teeta, the son of Reverend Kamoriki.'

The English of his sonorous rather guttural baritone was hard to understand. You had to get used to it first, but Bwere explained that his family invited us to supper and that the Kamorikis would be glad to put us up.

We thanked him politely, but asked if we could first check with the government hotel Otintai to see if we could get rooms. I mentioned our luggage and said that we did not want to overburden his hospitality. This circumspect refusal took ten times as many sentences as Teeta's invitation.

Bwere drove us to the Otintai in a Toyota delivery truck. When he spoke after a long silence, we heard that he wanted to help us.

'You must be free to move around; you need a car. I have a friend who will rent you his.'

He did not wait for us to answer and stopped outside a hut, next to which a small Datsun was parked under a palm-leaf carport—the Japanese also have a hold on Kiribati. For a couple of Australian dollars, we drove to the hotel in 'our own' car.

The sweating manager showed us to rooms 102 and 103 for one night. The next day it would be decided whether we had to leave the hotel because of the strike. When he handed over the keys, we took our luggage up to the first floor and opened the doors to two rooms which looked completely uninhabitable. In true Swiss fashion we got down to some spring-cleaning. We emptied stinking wastepaper baskets, gathered up the contents of overturned ashtrays, used rolled-up newspapers to sweep the floor clear of nut-shells, cigarette butts and ragged underwear and fastidiously removed filthy sheets and blackish-grey towels from the shower and put them in the corridor—to be removed after the strike. Above us the air-conditioning hummed its monotonous song and wafted cold air at us, making the rooms an

oasis in the humid heat in spite of everything. After a good wash we left the hotel and spent the evening with the Kamorikis. We were curious. Were we going to get just a little nearer our goal?

Teeta and Bwere were in evening dress—the former wore a pillarbox-red cloth round his loins, the latter a sky-blue one. Before entering the living-room we took off our shoes and stockings, for everyone went barefoot, including an old lady who shook hands with us and curtsied. She spoke to us in a melodious voice. She nodded, we nodded, we smiled when she smiled and we tried to say a few words of English, but made a mess of it. Bwere whispered that she was Reverend Kamoriki's widow, Teeta's mother.

Her polite son, who softened his harsh baritone in her presence, invited us to sit on three chairs placed against the left-hand wall, the most comfortable part of the room because it was next to a fan. Bwere and Teeta squatted next to us, tailor fashion.

An incredibly funny pantomime began. We sat speechless as if we were hatching ostrich eggs. The merry widow's chubby face radiated cheerfulness and affection. Could she be under the effects of some kind of drug? Her eyes twinkled, she nodded confidentially, a friendly gesture we returned. Sometimes, but I don't know if it was intentional, an eyelid closed briefly as if she was winking. In case this was a local custom, I winked gaily back. Marcel Marceau, that marvellous French mime artist, should have seen us. What a number he would have to add to his programme!

This comic performance was interrupted by three enchanting girls. They danced in barefooted to unroll a gaily coloured 'tablecloth' on top of the coconut mat. They, too, kept nodding at us, then disappeared silently to return with dishes and bowls which they laid out on the floor, along with plates and beakers.

Because we were hungry, we gaped rather rudely at the lavish meal which made our mouths water: green, yellow and red vegetables, raw and cooked coconut meat, honey-coloured sweet potatoes, steamed and baked fish, cubes of meat in spicy sauces, grilled breadfuit, rice. Only the official protocol stopped us from tucking in.

Three sweet little girls aged six or seven came up to us

quite unaffectedly and crowned our unworthy heads with brilliant wreaths of flowers that smelt of jasmine and orchids. Before we could thank them, the little fairies had vanished. Then widow Kamoriki, wearing a red dress with white flowers on it, stood up near the opposite wall and made a speech which Bwere translated. I took it down on tape and brought it home with me.

Widow Kamoriki said 'My late husband, who rests out there in the garden, offered you our hospitality—as is the custom. He told me to make you welcome—as is the custom. The wreaths in your hair mean friendship and peace—as is the custom. My daughters are happy to be able to cook and wash clothes for you—as is the custom. My sons are honored to be able to help you—as is the custom. I am only a foolish weak old woman who is fulfulling her husband's wishes—as is the custom. Our house is your house, our family is at your service—as is the custom.'

Mrs Kamoriki sat down and smiled at us. We were moved by the hospitality of the good-natured old lady. Although I was as hungry as a hunter, I stood up to express our gratitude and assure her that we visitors from a small country on the other side of the globe would be happy, during our stay on the Kiribatis, to learn what we had been unable to learn so far, and I offered our condolences on the death of the husband and father. I said that we would do nothing that would displease the late Reverend.

The old lady nodded amiably and gestured to us to start eating. We left our chairs and squatted on the floor like Bwere and Teeta, next to the buffet. Groaning dishes and bowls circulated; we used our hands to heap our plates with all the delicious food. At first, in the European way, I offered dishes to the women, who were huddled against the wall at a distance, but they solemnly refused. They did not laugh and smile again until they saw that we liked the meal. We were only too happy to stuff ourselves. It was an outstanding meal, not least in comparison with those hideous spaghetti sandwiches! When we could not eat another morsel, in spite of constant pressing, the women crouched by the remains of the food on the gaily coloured cloth and began to eat. If we had known of this custom we would have tamed our appetites and left more.

During the women's snack, we discussed our plans for the next few days with Bwere and Teeta over a cigarette. Bwere thought that the stone circle was at a holy place on the island of Abaiang, as Reverend Scarborough had also intimated in his letter. Bwere said that Teeta would try to procure a boat and enough petrol for us to visit the island, which was 50 km away.

Teeta asked if I had black Papuan tobacco on me. I hadn't and asked why. I was told that the place was taboo and that I would have to offer the tobacco as a sacrifice to make the magic of the place well disposed to us. Teeta firmly refused to obtain the tobacco for me. We had to buy it ourselves if it was to have any effect on the magic.

During our conversation, more than a dozen young men and women wearing only the brightly coloured *tepes* round their waists crowded into the room, whispering and stealing curious looks at the flower-crowned foreigners. I have never seen better-looking people. We forgot the legendary circles, compass stones and myths; we were under the spell of vital animated nature. The group formed a row which gave us time to admire the graceful movements and sensuous charm of the young islanders, creatures from some paradise thought long lost. I began to understand the biblical giants and sons of the gods who had sinned with the daughters of man. Were they aware of their beauty, their fascination?

They sang. Beginning softly, then swelling to become a polyphonic choir. Two boys strummed guitars and a third drummed the rhythm on a hollow treetrunk. There were many vowels in the melodious song. After the third song boy and girl singers sat on the floor. A young girl knelt down before us and shouted in English, 'Now it's your turn!'

We had to sing! After a quick consultation, we found out that our trio would have to be reduced to a duet. Rico said even at school he had been asked to keep his mouth shut because of the horrible noises he made.

Our hosts and the choir gazed at us expectantly. Willi and I bravely rendered 'Blue Suede Shoes', not as well as Elvis Presley sang it, but well enough to be asked for an encore. Willi and I sang 'My Love Is Like a Red Red Rose'. It was a smash hit. There was a standing ovation, with applause, laughter and jumping about—a horde of happy children in paradise.

The locals live in palm huts which are open all round. At any time of day you can see women, children and their neighbours exchanging gossip.

The young islanders continued the lively programme until they broke off abruptly after a song, squatted again and the young girl repeated her challenge.

'It's your turn!'

Because this could go on for ever, but also because our repertoire was running dangerously low, I tried desperately to think of a crowning melody. I had an inspiration. I went over to the singers and asked Bwere to explain to them that we would all sing a well-known European folksong 'Frère Jacques', a lovely, but simple, melody. I hummed the tune, then sang it aloud with the words and it took only a quarter of an hour before the musical Kiribatis were singing 'Frère Jacques' at concert pitch.

Owing to this communal singsong, our soirée with Mrs Kamoriki, the close of our first day on Tarawa, gave us the freedom of the island. People waved at us when we walked down the street. When we came to the big *maneaba*, the com-

munity house, the centre of every village, people shook hands with us and pulled us—a gesture of special friendship—into the room that was open on all sides beneath the roof of brown palm fronds. It is the meeting place at which the old men do the talking and the young men are only allowed to join in if they are asked to. Women have no place here. They did not seem any the worse for it when they greeted us cheerfully. When we looked inside the open huts which were scattered around, we could see them in animated conversation with their daughters and neighbours. Often they sang and sometimes we even heard 'Frère Jacques' during our stay.

Over breakfast at his house the next morning Teeta said that the sea was too rough for a small boat and that he could not get enough petrol for a large boat because of the strike.

We ate bread from the breadfruit tree. Each year every tree bears up to a hundred fruit the size of a Rugby football. These trees grow plentifully on the Kiribatis and the whole fruit as well as its green shell can be used. When ground, it makes a pleasantly spicy-tasting porridge. Cut in slices like pineapples and grilled on hot stones, it forms a coarse-grained cake which tastes infinitely better than our industrially made bread.

It tasted good but I could not enjoy it. The idea that the crazy strike might cripple our venture ruined my appetite. I took a drink of cold coconut milk and said, 'Yesterday Bwere mentioned a small airline. Couldn't we fly to Abaiang?'

Teeta looked at me in surprise and answered in his agreeable baritone, 'Okay, let's try it.'

Teeta, who was our guardian angel during our stay, went to the airport with us so that we could meet Gil Butler, the Australian head pilot of Air Tungaru. We met a bad-tempered aviator, who was swearing like a trooper about the strike and asked sarcastically if we Swiss had a magic wand to cure the chaos caused by the misguided islanders. Fly to Abaiang? No, he could not fly today because of the strike, but tomorrow a colleague was flying a government deputy to Abaiang and if there were empty seats we could go with him and be back by evening. Being a best seller turned out to be a blessing. Gil Butler had read my book *Return to the Stars* and invited us to dine at his house the following evening. I

accepted gladly as I saw a further chance of getting to one or another of the islands with him, regardless or in spite of the strike.

We sensed that Teeta was embarrassed by the strike and was doing his best to keep us in good spirits. He led us into a hut and pointed to a bundle of sticky black plugs of tobacco which smelt revoltingly of liquorice, damp cigarette butts and—I have to say it—sweaty feet. This tobacco was imported from Papua, New Guinea. I bought a bundle, convinced that the stench would drive out even the most evil of spirits once we stood on the threshold of the holy places.

After this shopping session Teeta drove us to the little village of Bairiki and left us in the library, which had an astonishing assortment of books. It contained literature from all over the Pacific. Thank heavens there was no strike here. Polite attendants brought us all the books we wanted. I was particularly interested in one book,[4] the joint work of twenty-five local authors, which contained the saga of the origin of the world and the Kiribatis. Under the humming fan which slowly stirred the heavy air in the room, I read a remarkable addition to my collection of prehistoric myths.

In the beginning, a long, long time ago, there was the god Nareau, the creator. No one knew where he came from, no one knew who his parents were, for Nareau *flew alone and asleep through the universe.* In his sleep he heard his name called three times, but the one who called him was a 'nobody'. Nareau awoke and looked around him. There was nothing but emptiness, but when he looked *down* he perceived a large object. It was Te Bomatemaki, which means 'earth and heaven together'. Nareau's curiosity drove him to go down there and he paid a cautious visit to Te Bomatemaki. There were no living beings there, no men, only he, the creator. He circled the world he had discovered four times, from north to south and from east to west, and he was alone. Finally Nareau dug a hole in Te Bomatemaki and filled it with sand and water. He mixed them together to form rock and ordered the rock, together with the void, to bear Nareau Tekikiteia. That is how Nareau Tekikiteia, which means 'Nareau the Wise', came into being at the command of Nareau.

Nareau, the creator, now ruled over Te Bomatemaki, whereas Nareau the Wise was on earth. They were able to

speak to each other and decided to separate the heavens from the earth. After great efforts their plan succeeded. Then Nareau the Wise created the first thinking beings, to whom he gave names such as these:

Uka, which means the concentrated power to stir the air.
Nabawe, which means the concentrated power of age.
Karitoro, which means the concentrated power of energy.
Kanaweawe, which means the concentrated power of dimension (distance).
Ngkoangkoa, which means the concentrated power of time.
Auriaria, which means the concentrated power of light.
Nei Tewenei, which means comet.

That, then, is the commonest version of the myth about Nareau, though there are some variations. Arthur Grimble[1] supplies an important amplification: 'And when the work was done, Nareau the creator said: "Enough. It is finished. I go, never to return." And he went, never to return, and no man knows where he lives from that day to this.'

There are sparkling stones in this tradition that fit perfectly into the great mosaic of the gods-astronauts theory.

The creation god Nareau flew alone and asleep in space, when someone, who was a nobody, called him by name and woke him. Looking at this from a modern standpoint, we can imagine an ideal spaceship whose pilot has been put into a deep sleep by a special process to check the activity of his body cells until he comes to a place which makes his organism start up again at a desired point in time. For some time space travel doctors have been discussing various types of physio-chemical deep sleep to keep astronauts alive over long distances and periods of time until x hour. When the ship's computer confirms by radar that the spacecraft is approaching a solar system, the deep sleep is terminated. 'His name rang out and Nareau awoke.'

The newly awakened pilot looks around him, but all he can see is the blackness of space, but *below him* he sees a planet from which the gravitational attraction of a solar system is effective. 'Then Nareau looked down and perceived a large object.'

In possession of his faculties once again, the pilot decides to land on the third ideal planet of this solar system. 'Nareau stretched his limbs. He wanted to know what kind of an object it was . . . He went down and set foot on it cautiously.'

The astronaut reconnoitres the whole planet from the air and recognises the prerequisites for life, but sees no kind of life. He decides to plant the seeds of life. 'At that time there were no spirits and no men, only the mighty Nareau.' Perhaps the methods used were too complicated to find their way into popular myths and be understood. For example, Nareau could have blown blue algae out of his spaceship. He could have diffused bacteria or, but less probably, scattered the seeds of hardy primitive types of plant. 'Nareau dug a hole in the earth and filled it with sand and water, he mixed them together to form rock . . . and ordered [it], together with the void, to bear the earth [Nareau Tekikiteia]. That is how Nareau the Wise came into being.'

It may be that the nickname 'the Wise' originally stood for 'spirit' or 'endowed with a soul'. Life now begins where once the sterile void reigned. From this prehistoric beginning two creative elements were active. Nareau, the creator of all being, and Nareau the Wise, who started terrestrial development. 'Nareau the creator was now over Te Bomatemaki, whereas Nareau the Wise was on the earth.'

But it is amazing to find a creation myth with concepts such as 'concentrated power of energy', 'concentrated power of dimension', 'concentrated power of time', and 'concentrated power of light'.

My imagination is not powerful enough to guess what the first Kiribatis understood by all this. Unwittingly they handed down clues to the powers of an inconceivable god. Nowadays it is easy to realise that the concentrated power of light comes from the concentrated power of energy. We know about the researches of Professor Eugen Sänger (1905–64) into photon drive for spacecraft, which, once outside the field of gravity of a solar system, could accelerate them to incredible speeds. Today we know that all acceleration is connection with the 'concentrated power of dimension'. This acceleration implies the ability to cover vast distances, a process which is coupled by a natural law to time ('concentrated

power of time') and age ('concentrated power of age'). Time dilatation is an empirically proved natural law.*

The amplification by Arthur Grimble[1] of what I noted down in the stuffy library at Bairiki is important.

'And when the work was done, he said: "Enough. It is finished. I go, never to return." And he went, never to return and no man knows where he lives from that day to this.'

On interstellar journeys at very high speeds disappearance for ever is plausible. I seemed to hear that fantastic song by the pop group Jenghiz Khan:†

> They were called gods for there was no other word for the aliens. Yet in the books of the ancients it says that when the aliens come again we shall no longer exist. Only their traces remained on the earth. Water and sand had covered everything, and no one knew what message they brought, the aliens. They were called gods for there was no other word for the aliens.

I do not know who inspired the authors to write those words. When friends ask me if I was the author, I can swear under oath that I wasn't!

The same questions crop up in all creation myths. How did our forefathers know that life on earth is of extraterrestrial origin, that it was introduced by chance or according to plan? There were no witnesses to the creation of the Kiribatis—Nareau flew to our solar system while asleep and initiated life—or of any other peoples. To whom could Nareau tell the story of his mission? Is it all the luxuriant imagination of the storytellers, with no real background?

The Bible tells us that God created heaven and earth when the earth was still 'without form and void, and darkness was upon the face of the deep'. So there was no reporter present at the biblical act of creation, either.

As none of the traditional mythological acts of creation had eye-witnesses or chroniclers, yet creation myths are concentrated on *one* major event and handed down all over the world, the logical answer to all questions was obvious. Millions of years after the creation, the god responsible

* *According to the Evidence*, pp. 201, 204.
† Jupiter Records, No. 101777.

returned to the scene and told the men he had created about the events that lay so far back in the past—told them about their own creation.

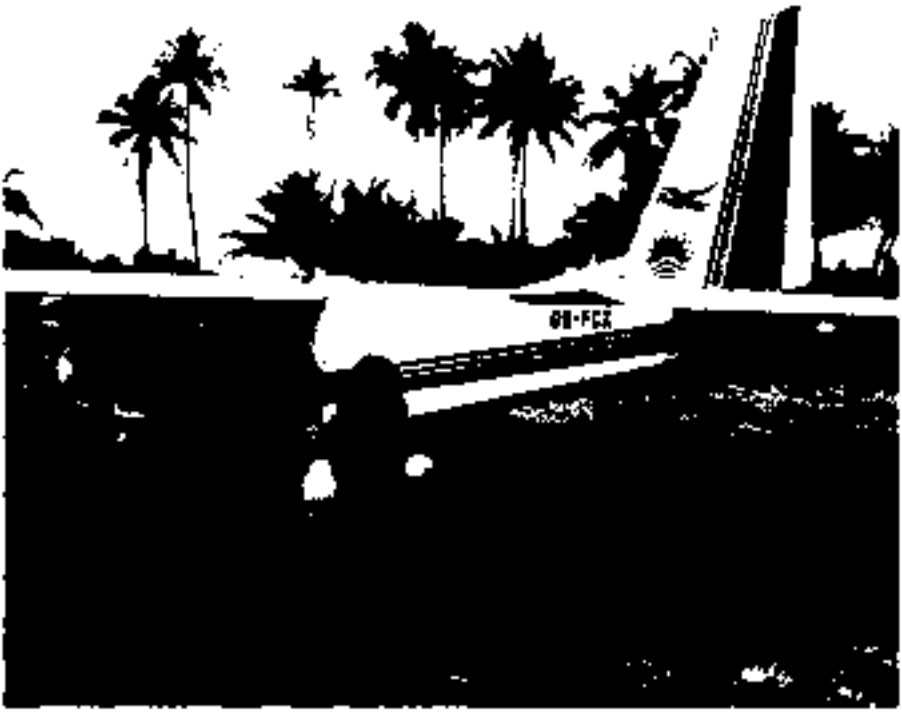
I can see ethnologists pulling sour faces as if they had been forced to suck a lemon, when they hear my simple explanation of the origin of such puzzling myths. They say that we must take all the circumstances into consideration, put many possibilities together and accept the simplest explanations first. After a headlong gallop the interpretation of pure science ends in clouds of psychological incense which bring tears to our eyes.

Myths survive in different versions. For they are retold over endless stages from tribe to tribe, from family to family, sometimes with additions, sometimes with omissions. Every criminologist knows how widely the statements of witnesses of one and the same set of facts can differ. It takes comparisons and the rejection of subjective embellishments to disclose the core of what really happened.

In the Kiribatis I also came across the story of Baby Terikiato, who was stolen and taken to the lady of heaven Nei Tetange niba. The lady flew away with the babe and brought him up as a demigod. In the west of the island, which is called 'the bird of Biiri', Terikiato, by now a young man, said to the lady of heaven, 'Look these birds are wonderful, for they look like men.' By a magic spell the young man's foster-mother made his arms strong and his body powerful. Terikiato climbed on to the back of a bird and held it fast. The bird turned in circles, then flew up to heaven and 'they came into land of the heavenly ones'. There Terikiato stood before the house of the celestial lady Ne Mango Arei, who asked him, 'Where do you come from and what kind of creature are you? No man may visit me, for I am different from mankind.' In spite of the obvious difference they produced four children. They called the first one Niraki ni Karawa, which roughly means heaven circler. The legend expressly says that after the offspring were born Terikiato returned to earth and at first settled in Samoa.[2]

This story is reminiscent of the heavenly flight of the Babylonian Etana,* who rose from the earth on the back of

* *Gold of the Gods*, pp. 120–21.



A small aircraft jolted us high over the rough sea to Abaiang. When we landed this primitive character brought us coconuts. He was the only long-haired islander we saw.

an eagle and described the globe from a great height, but also of the Japanese legend of the Island Child,* who was carried off to the heavenly fields by a fairy and later returned to earth. This theme recurs like a *leitmotiv* in many, many popular legends.

On the evening of my 'theoretical' day in the Bairika library I wondered if the tantalising myths had left tracks that were still warm, those tracks which Reverend Scarborough had put me on to. I could not wait for the morning.

At 6 a.m. Teeta, our dark angel, took us to the airport, a thoroughly misleading description in comparison with airports in our own latitudes. A twin-engined propeller-driven plane ferried us over the choppy sea to the island of Abaiang, which even in the early morning was steaming in the oppressive heat. Inside a bamboo hut, the airport building, Teeta, waving his hands about and continually pointing to

* *According to the Evidence*, pp. 124–5.

us, was talking to some men, two of whom set off at a trot and soon stopped near us with a Toyota lorry. They piled our luggage into it and rattled off with us over the deep potholes in the natural road, without sparing the vehicle.

Abaiang is a narrow atoll 32 km long, flat as a board and smothered in lofty coconut palms and breadfruit trees, from which heavy fruit dangled. It took us two hours to cover two-thirds of the island's length.

'Teeta, do you know where the circle under taboo is?' I asked, when we stopped in the village of Tuarabu. He shook his head and confessed that he did not know the place himself, although he had lived on Abaiang as a boy when his father was minister there. However his mother, our cheerful hostess, had told him who to look for to lead us to our goal. Thank heavens! Teeta left us, as lightfooted as a gazelle.

We took a look at the settlement of 451 souls. As on all the islands, the huts were made from materials obtained from the coconut palm. Many of them stood on blocks of coral which aided ventilation and kept out the vermin and crabs which abound as well as preventing the rapid rotting of the palm trunks in the muddy earth, which was even more important. Some boys clambered up palms, which at a height of 30 metres provide fronds for roofing, and threw down nuts which the men skilfully cut open to offer us the milk in a gesture of welcome. In this heat coconut milk quenches the thirst better than a whole carton of Coca Cola. It consists of 45 per cent water, the rest being valuable albumen, fat, carbohydrates and minerals, offered free and in profusion by nature.

Teeta reappeared in strange company. A skinny old woman shuffled along by his side. She was an uncanny figure in a kind of black robe, with a veil on her head. Her companion was a wrinkled old man, who carried a whimpering baby under his left arm and dragged along a boy under school age with his right hand. None of them said a word. The baby seemed to be hungry, but I did not think the old lady's bosom was still a source of nourishment, if indeed she still had one under her robe.

As we rattled off, packed like sardines in the back of the Toyota, Teeta lost his gaiety. 'Give the woman ten plugs of tobacco and a box of matches,' he whispered in his dry bari-

tone. The nun in the black robe nodded; the old man bared his teeth which were brownish yellow stumps. Some consolation, I thought, that even on the Kiribatis old age exacts its tribute and that not all islanders are good looking.

At the southern tip of the island the Toyota braked sharply. The village was called Tebanga and here our companions underwent a sudden change, as did the young people who had run up to see us. Laughter died away. Fear showed in everyone's eyes. Even Teeta, usually so cheerful, froze up.

'What's wrong?' I asked.

Teeta silently shook his head towards the tropical green vegetation in front of us, but said nothing. The nun in the habit walked into the bush on a path the width of a handkerchief. We formed a silent procession behind her. Grandpa and the little boy began to whimper now, in addition to the baby. They were afraid.

The old lady stopped and signalled to us to do the same. She emerged from the thicket into a clearing. A curtain of luxuriant tropical bushes hid her from sight. She advanced to perform the solemn ceremony, holding the stinking tobacco. What happened next took place against a background of noises—the songs and chatter of exotically coloured birds, the thunder of the nearby surf and the smack of our hands when we killed the mosquitoes which were tormenting us. In our opinion mosquitoes prefer the sweetness of the sinful foreigner's blood.

Without wasting a glance on us, the old lady returned and walked past us. Teeta, his fear of evil spirits removed by the tobacco sacrifice, gave me a gentle push and said, 'Go on!'

The clearing was a small space free of tropical undergrowth. It was obvious to me at first glance that nothing could grow there—even without magic. The area was thickly carpeted with coral pebbles. Larger round stones marked out a rectangle in which stood a coral monolith the height of a man, like a gravestone, a suspicion which a walk round it confirmed. I saw the name and date of death of some islander carved on the stone. The plugs of tobacco were smouldering under a mussel shell the size of a tortoise. The three of us were alone. The islanders watched us curiously and fearfully from a safe distance.

What we had found here had no connection with the mys-

terious holy places mentioned by the Reverend Scarborough. Remembering that we must always be polite to the islanders, we swallowed our bitter disappointment, took a couple of photos and joined the phalanx of waiting natives. The old lady with the magical abilities felt that the effect of the tobacco sacrifice was confirmed and looked at us proudly. Grandpa and the baby whimpered; in fact they never stopped. Even the comparatively enlightened Teeta submitted us to a critical scrutiny. Had his friends changed? Were they leaving the burial ground satisfied? But deep down we could not help feeling angry.

Not until the Toyota was some distance from the place which was so uncanny and evil to the islanders did the spirits of our companions brighten. Teeta handed round a plastic flask containing a milky lukewarm brew. As no gift must be refused, I overcame my revulsion and took a hefty slug, closely observed by everyone. I must have twisted my face into horrible grimaces, which Teeta took for those of a connoisseur, for he laughed delightedly, helped himself generously, then held the flask to the mouths of my friends. Besides the lady magician, Grandpa and the baby let the nectar run down their gullets and became tireder and tipsier every minute.

'What's this we're drinking, Teeta?'

'Sour toddy!' he replied as prosaically as if it had been a whisky sour.

'What is sour toddy?'

He stopped the Toyota and pointed with the bluish tip of his index finger to the top of a coconut palm. Large and small bottles hung down from the branches under the leaves. The sugar-rich sap was being tapped. It had to stand for three days, then it started to ferment and knocked you over like new wine—a dangerously intoxicating drink which put the almost teetotal islanders out of action for hours. So the coconut palms even provide alcohol!

The sour toddy worked like a sedative, otherwise I should have gone berserk! Back at Tuarabu, our starting point, the old men were standing round gossiping, just as they had been early that morning. Striving to be a civil European, I asked Teeta to find out about the place where we had been taken in error. Our dark angel discovered from his fellow countrymen

The circle under taboo lies in a rectangle free of undergrowth and covered with coral pebbles. The islanders are convinced that anyone who enters the rectangle will die soon afterwards.

that we had visited the tomb of a mighty warrior, whose great spirit still protected his family today. All honour to the warrior, I said, but our goal was a stone circle without a tomb, a sterile area, where even palms could not grow.

If we could have heard the noise of the ideas revolving in the old men's heads, it would have sounded like millstones at work. One could see from their expressions how they were racking their brains. A light gleamed in the eyes of one old fellow. Yes, he said, there was such a circle in northern Tarawa. There, from time immemorial, dwelt a 'mighty spirit', who would not tolerate being disturbed, so that even birds which flew over 'his kingdom' fell to the ground dead. That was music to my ears—but was it really our goal?

Before the sun rose from the sea on the fourth morning of our island life, we went to dinner at the house of head pilot Gil Butler, as invited. Gil told us that he had not the faintest idea where we should make for. He said that the island of

Tamana mentioned by the Reverend Scarborough was 544 km away as the crow flies, whereas northern Tarawa could easily be reached by boat. He added that the next day he could fly us to Tamana for 225 Australian dollars per hour's flying time. I decided to accept this offer.

The natural landing ground at Tamana did not look too good from above and this proved to be true on landing. The runways made by Air Tungaru are no more than narrow strips hacked out of the palm forest and roughly freed of stones and undergrowth. The islanders are supposed to maintain them and chase off stray dogs and grunting pigs. They say, 'Eng, eng,' yes, yes, and a week later, the grass has grown again, the tropical rain has washed up more stones and animals are grazing and grunting again. Each landing and take-off demands tremendous skill on the pilot's part. Our aircraft did a slalom between animals and stones. Teeta made for a palm hut in which three of the ground staff were lounging. Our dark angel now knew exactly what we were looking for and explained to his countrymen, stimulating their imagination and memory with gestures and a torrent of words. Finally he approached with the three men.

'Over there are graves with very large beings!'

'Are you sure?' I asked. Teeta cross-examined them once more. They nodded and pointed straight across the landing strip to the hedge of palm trees. Draped with heavy gear, we marched off. High noon. The sun was perpendicularly overhead. It grilled our bodies pitilessly. Sweat poured off us; it even ran into our shoes. Palefaces that we were, we dared not take our shirts off or we would have been one big blister in no time. Swarms of greedy mosquitoes bit us through our clothing. Our camera straps cut into our shoulders as if into raw meat.

Graves covered with brown coral stones came into sight.

'Is that it?' I asked. My tongue was sticking to my gums with thirst and disappointment.

'*Tiaki, tiaki.* No, no, it's further on,' said the ground staff, cutting their way through the dense undergrowth, dodging round palm trees, climbing over mounds of stones and graves until they beamingly announced, 'That's it!'

We looked blank and disappointed. Teeta sensed that this was still not the right place. He turned away in embarrassment and scratched his enviably thick hair.

How were we going to make any progress? The locals were willing and doing their best. It was up to us.

'Teeta,' I began carefully, 'tell the men I am grateful for bringing us here and that we are surprised to see so many ancient graves, but that the graves we are looking for are very large, much larger than these. They were built for giants who were twice and three times as big as you and I. And these graves must be located somewhere on their own, not in the middle of a burial field like this one, for the giant men would not tolerate either life or death anywhere near them.'

Our indefatigable interpreter entered the circle of men, who looked quite cheerful in spite of the burning sun and oppressive air. I could see that Teeta was doing his utmost to explain what the white men wanted to see. One of them started to talk to our friend and assured him that there were larger graves at the end of the island, larger than the biggest one here.

'Are there other graves in the vicinity?' I asked.

'Eng, eng,' yes, yes, they agreed enthusiastically. I realised that we would only be on the wrong track again. I took paper and pencil from Willi, sat on a grave and questioned Teeta about the circle.

'Is the grave you're talking about bigger than any grave here?'

'Eng, eng.'

I called to a man and asked him to draw the burial mound. He did so with rudimentary lines.

'Now draw the other graves surrounding the big one.'

He drew the layout of a whole cemetery. It was not the place we were looking for. Obviously politeness prevented the Kiribatis from saying 'no' to a foreigner when they could not satisfy his wishes. I dreamed up a story.

'Listen. A long time ago there were two big men, much bigger than Teeta. They came from a distant land, perhaps even from heaven. They were so strong that they could throw the canoes of your fathers into the air like coconuts. Your people made them drunk and conquered them with a magic charm. Then they killed them and threw their bones into a deep grave so that they could never cause trouble again. Do you know where those graves are?'

They listened attentively to Teeta's translation. After a

lengthy silence and much deliberation, a man stepped out of the group.

'One tomb of the giants lies at the southern tip of the neighbouring island of Arorae.'

'Are there also large stones which point to islands lying far out to sea?'

Yes, the man assured me, he had seen such stones when he lived on Arorae with his father. The island was not visible from our present location. At a distance of 80 km, it was the furthest south of the sixteen Kiribati islands. Ought we to risk flying there on such vague information? Owing to the strike Gil Butler had only a limited amount of petrol, but by now he was so infected with the prospecting fever, that he overruled us. Within half an hour his aircraft was hopping down the runway. It was two o'clock and the equatorial sun was beating down as strongly as at noon.

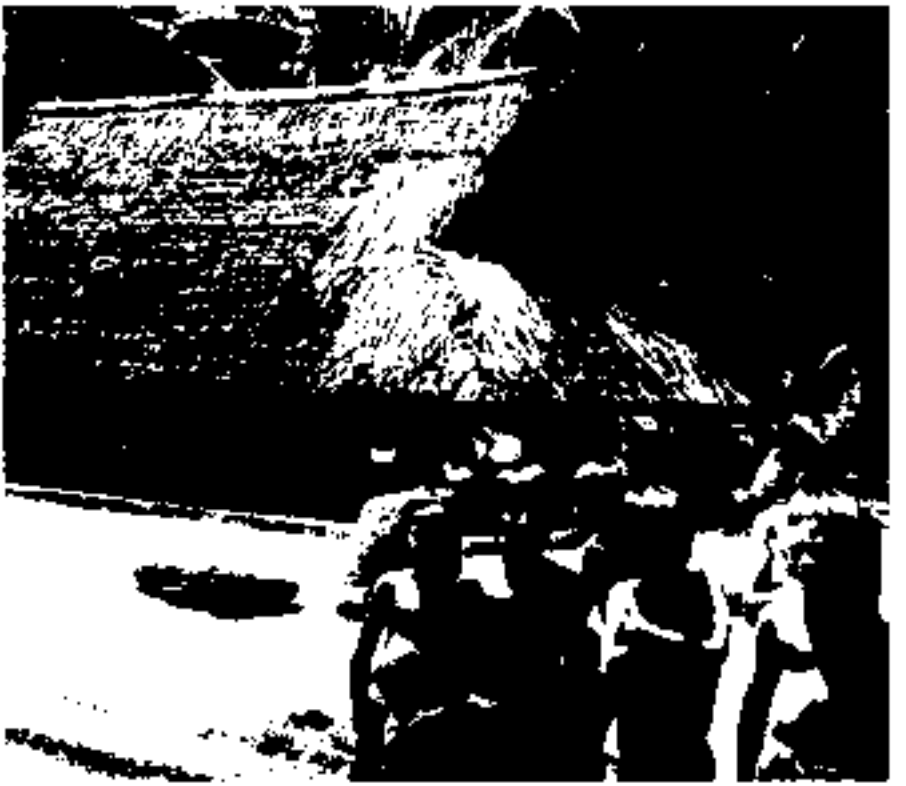
Arorae, too, boasted three natives dozing in the shade of a shelter made of palm fronds; here, too, animals were grazing on the runway. But the ground staff had bicycles! Teeta asked the usual questions and we were directed to an old man who was reputed to be well versed in the local topography. We swung into the saddles of two rusty old bikes.

The lively old man, flattered at being asked to give information, explained with a wealth of gesture were the giants' graves and the navigation stones were to be found. With renewed hope, I reflected that the island was only 4.5 km long and a few hundred metres wide, so that anyone who'd grown old there must know it like the back of his hand.

When I asked Teeta to chase up more bicycles, the news spread like wildfire. Fourteen strong, we cycled back to the so-called airport. I pressed coins into the hands of the riders whose cycles we had asked to rent and our expedition set off on the 4 km stretch, which is no distance under civilised conditions. In Arorae it was a cross-country rally of the most testing kind—through quagmires and fine sand, across ill-kept fields through luxuriant tropical undergrowth, constantly tormented and attacked by swarms of mosquitoes.

The old man had lived up to his promise.

On the northern tip of Arorae, directly behind the *maneaba*, the community house, there was a rectangle marked out with neatly arranged flat stones. The stone wall rose one



The second giant's grave was destroyed to make room for this *maneaba*, the community house of Arorae.

metre above ground. There were no graves or gravestones. Five paces from the putative giant's grave was a square shallow hole. The sunlight was reflected from the water it contained. The Reverend Scarborough had mentioned two giant graves. Where was the second?

Teeta found out that years ago, when the *maneaba* was built, the islanders needed extra space and had removed the second grave. They were not afraid to do so, because there was nothing left of the spirits' magic or the giants' bodies. Whether terrestrial or extraterrestrial giants had been buried here, I was not surprised that the spirits had evaporated, their bones dissolved in the brackish water.

So now we stood in front of a burial mound measuring 5.3 by 2.9 m. There was no question of rummaging about under the pile of stones—what was to be found? Besides Gil Butler had to be back before nightfall. At all events we should depart with the definite impression that this was an ancient myth-

Leaving Arorae Airport.

ological grave. We paid a silent tribute to the memory of the Reverend Scarborough and asked ourselves where the navigation stones were. We were told that they were at the opposite end of the island, far beyond the landing strip.

If it had not been for the ubiquitous strike, we should have taken it easy and flown back another day, but we had to make the most of what was presumably our only chance. The rally was repeated, but there was no question of cycling, once we had left the primitive country track. Dehydrated as we were, our march through the sand dunes was torture. Sometimes I found myself having hallucinations of the kind described by desert travellers saved from death by thirst.

My heartbeats hammered in my temples and echoed in my head. Only ten minutes away from our goal, I fought down a faint-hearted inner voice which said give up. I tottered along behind Teeta and could not look at Willi and Rico whom I had enticed to share this adventure. I heard them panting

Sighting stones ravaged by wind and weather are planted in the ground, forming a diagonal in a rectangle marked out by stones.

behind me and could imagine their reproachful looks. Suddenly I was wide awake, or was I seeing a mirage?

No. The monoliths that were my goal were there, close to the surf. One lay on the ground, another stood upright. All my efforts were forgotten.

Large stones, ravaged by wind and weather, protruded from the ground, once carved into rectangles, now gnawed by the teeth of time. They were all enclosed by a rectangle of small stones. An unimportant burial field of the kind I had seen umpteen times in other parts of the world?

My senses were alert again and I noted that the upright monoliths (easily the height of a man) pointed in different

The bones of a mythical giant are reputed to lie beneath this pile of stones. In the background, participants in our cross-country rally.

A mirage? A field with monoliths close to the surf.

directions. I also discovered dead straight grooves cut into the top of the stones—signposts to distant goals.

We consulted our compass and maps.

One line pointed undeviatingly southward to the island of Niutao, which belongs to the Ellice Islands, a group of nine atolls, and is 1800 km away as the crow flies. Another groove pointed south-east to West Samoa, 1900 km away as the crow flies to the east of the Fiji Islands. A third line was aimed at the Tuamotu Islands in the South Pacific, 4700 km away as the crow flies, and after that approximately at the Hawaiian Islands. Once again a thank-you winged through the air to the Reverend Scarborough at Cape Town!

Two of the navigation stones were made of granite, which does not exist on Arorae, three had the characteristics of volcanic stone and the others consisted of material from the coral reef.

I toyed with many of the ideas which always crop up when I am confronted with prehistoric navigational problems, as I was here on Arorae. It is unanimously accepted that the islanders have always been able to solve simple navigational problems with the help of the stars and their knowledge of currents. But this does not solve the biggest puzzle of all, how the first, the very first, seafarers reached goals of whose existence they had no inkling. When they set sail from the coasts of their home island, they did not know where they would land, nor had they any idea how long the voyage would last. If the goal was just anywhere, experience gained on the outward voyage would not help their return, because the stars change their positions, and currents and winds do not stay in one direction. If we accept, as is done today, stars, currents and winds as navigational aids, we presuppose that the earliest seafarers knew about difficult aspects of astronomy, marine currents and wind movements, a state of knowledge which had not been generally reached by our early forefathers.

I remembered a recent conversation with the ethnologist Dr Robin Watt in the museum at Wellington, New Zealand. Questioned about such navigational problems, Watt claimed

Stones as tall as a man, compass stones, point to distant islands. Many of them have collapsed, eaten by wind and weather.

that he could not see any difficulty. The Maoris, for example, the Polynesian people of New Zealand, knew that there were archipelagos to the north-east, such as the present-day Fijian, Tonga and Samoan Islands. So all they had to do was steer in a general north-easterly direction in order to reach land somewhere among the network of islands. Once they had landed, the local inhabitants would help them to sail further.

At first this sounds quite reasonable, but then doubts about this 'solution' of the problem arise. Setting off in a 'general north-easterly direction' presupposes a precise idea of what that means and especially the knowledge that there are islands in the sea somewhere in that direction. Catamarans, rowing-boats, canoes and even sailing boats could easily sail right through the wide-meshed net of islands without making a landfall. A journey to 'somewhere', with no return! Obviously there are navigational aids for the experienced seaman even when there is no land in sight: refuse carried by the waves, tree-trunks, the bodies of animals. But they are minor aids which are of little use at night or in stormy seas.

When I hear all the explanations and check them, I feel that the prehistoric seafarers must have known their goal very precisely before they set forth and that they took plenty of supplies with them. Did they operate on the basis of knowledge acquired over the centuries or were they instructed by their mythological 'gods'?

Who brought the stones here? Who put them in position? Who knew about the specific directions in which 'invisible' islands lay? The only concrete witnesses in a desert of questions are the navigation stones which stand before us in the glaring sun and the mythologies of the Pacific which without exception speak of flying beings, their 'gods'.

A central myth is the legend of the bird Rupe, which is attributed to the Maoris, but nevertheless appears among other peoples in countless variations.

According to one version, Hina, one of Rupe's sisters, married Tinirau, who took his wedded wife to a distant island, made her pregnant and shut her up in a house which he surrounded with a 'protective screen'. This not only prevented Hina from leaving the house, but also stopped strangers from forcing their way in. When the time to give birth approached, there was no one to assist Hina. In her

need she cried out, 'Rupe! Rupe! Come and help me.' Soon there was a whirring noise above the house and the bird Rupe shouted to his sister, 'I'm here, Hina!'

The bird Rupe could not reach his sister until he had bored a hole in the protective screen. After a difficult birth, Hina asked to be flown back home. But first Rupe was to evacuate Tinirau and his countrymen and then she would follow. Rupe explained that he would have to ascend into the sky three times. The islanders clung to Rupe's back. He flew them far away and tipped them into the sea. After three flights, he collected Hina and her baby. High in the air, Hina saw bodies and articles of clothing floating in the sea. She asked why he had killed them. Rupe replied, 'They did you wrong when you lived in their country. They imprisoned you and no one helped you during childbirth. So I was angry and threw them all into the sea'.[5]

Our Rupe was a strange charter plane!

The Kiribati legend of Te Bongi Ro, the 'Black Darkness', relates that those who dwelt in heaven landed before men existed. Before their return they left a founding father behind on every large island. The names of these legendary fathers are interesting—Bai Matoa, Matinaba and Matiriki and the rest—for they all correspond to descriptions of stars and constellations. Are these tracks that are still hot enough to lead us to the begetters of the navigation stones?

The ancient temple of Te Mahara on the island of Raivavae in French Polynesia is still considered to be the point where the mythological god Maui landed after his space flight.[6] There is a similar legend originating from the first inhabitants of Atu Ona, one of the Marquesas Islands. On it is the small mountain of Kei Ani, which is looked on as a temple, although there are no signs of a man-made building. The first Polynesians called the mountain Mouna tuatini-etua, 'Mountain of Many Gods', or Mouna tautini-etua, literally, 'Mountain, on Which the Gods Landed'.[7]

I get no special pleasure from proving my hypotheses with so many myths and legends from the Pacific. It is no effort on my part, there is such an abundance of them. So I shall play some aces from my hand.

Legend says of Ta'aroa, the god of creation of the Society Islands: 'Ta'aroa sat in his mussel, in the darkness of eternity.

The mussel was an egg which drove through endless space. There was no heaven, no land, no sea, no moon, no sun, there were no stars. All was darkness, dense all-pervading darkness.'[8]

During the last century venerable priests told ethnologists about the god Jo: 'Jo moved through the infinity of space. The universe was in darkness, there was no water anywhere. There was no trace of sunrise, no brightness, no light.'[8]

The oldest legends have this to say about the god Tagaloa on the Samoan Islands: 'The god Tagaloa floated in the void, he created everything, he was alone. Before him there was no heaven, no land, he was all alone and slept in the vastness of space. Nor was there any sea, nor did the earth exist then. His name was Tagaloa fa'atutupu nu'u which means something like "cause of growth".'[9]

Hawaii, presumably influenced by Christian missionaries, has the triune god Ku kau akahi, a contraction of the names of the gods Ku, Kane and Lono. Kane is the creator, who created men 'in his own image'.[9] Needless to say, Kane came from the darkness of space. The prayers offered to him praise his home at the firmament:

The wandering stars,
the immovable stars,
the moving stars of Kane,
countless are these stars.
The big stars, the small stars,
the red stars of Kane.
O infinite universe!
The great world of Kane,
the great sun of Kane,
they move in the vast expanses
of the universe.

Today if you ask the Kiribatis, Maoris or any other islanders about their traditions, you will meet with incomprehension. They no longer know anything about their ancient gods. Missionary activity in the Pacific buried ancient cultures, set up new ones and banned the oral transmission of 'heathen' memories. For what is left we can thank the

ethnologists who, at the turn of the century, recorded what was told them. The ethnologist Robert Aitken has described what a Sisyphean task it was.[5]

'It was disappointing to find that most people admitted they knew nothing about pre-Christian sagas. Almost everyone could repeat psalms or long passages from the Bible, but very few could or would tell me what must have been common knowledge before the introduction of the Bible.'

Thus old, important, undoubtedly explosive knowledge disappears into the maws of time. It is absurd when towns and unique buildings are bombed to dust and ashes in today's crazy wars. But when important evidence of our common past is wiped out with the palm of peace in the hands of clergymen, it is downright madness. I cannot prove it, but I am sure that there must have been references to the compass stones of Arorae in the old traditions if they had not been zealously rooted out. So five stones stand there upright and point to distant goals with their grooves, while eight monoliths lie half a metre above ground. We shall never learn what technique enabled the primitive islanders to aim at unknown points in the open sea.

The government of the Kiribatis, which has not been in power long, does nothing to preserve the stones. They are known only to a few old men and they have not got the secret of eternal life.

We arrived in Tarawa as night was falling. We were met at the airport by Father Hegglin, a Swiss compatriot, and Dr Rosina Hässig, who was working for the World Health Organisation at Tarawa Hospital. The tea, relic of English colonial days, that we drank with Dr Hässig moistened our parched throats and restored our spirits. Naturally I could not wait to ask her about the legendary magical circle that was reputed to exist in north Tarawa. 'Never heard of it,' she said, but added after a moment's thought, 'If anyone knows about it, it's our medical superintendent. He is from here, grew up in north Tarawa, studied in America and then came back home.'

Without further ado she took me to see the superintendent to whom I put my question straight out so as not to bother him unduly.

He gave us a benevolent appraising look, as do all consultants, and diagnosed the case.

'Why do you want to find the circle?'

'May I conclude from your question that this magic circle exists?'

'Yes, it does. For untold generations it has been taboo and my countrymen are convinced that it is fatal to anyone who enters it. Do not get any wrong ideas, it is no enormous giant circle. It's comparatively small and its centre is laid out with a rectangle of small stones. If you will take my advice, do not visit the circle!'

That wasn't diagnosis, but therapy by a skilful doctor who knew how to wield the scalpel. 'Are you superstitious?' I asked with a grin.

He laughed. No, he said, he did not believe in ghosts and spirits. Ultimately there was a scientifically possible explanation for everything, but until one was found we should not casually dismiss the experience of his compatriots during long years of observing what went on in the magic circle. For example, they had noticed that animals which ran through the circle contracted mysterious diseases. 'Was there any question of radioactivity?' I intervened. No, that could be excluded because artificial radioactivity had only existed since the work of Marie Curie in 1903, whereas the odd happenings had been observed from the earliest times. The head doctor had no explanation for me, but he confirmed the existence of the magic circle mentioned by the Reverend Scarborough.

Although there was no service at all, we were still staying at the government hotel Otintai, in spite of the strike. We were allowed to stay and that was a good thing, because all our destinations were easier to reach than if we had accepted Teeta's repeated invitation to his parents' house.

Our dark angel came for us at 7 a.m. In spite of the strike he had laid on a boat and three cans of petrol so that we could chug off to northern Tarawa. After an hour and a half's journey through the lagoon we reached an islet barely as big as a football ground. Teeta asked for five plugs of tobacco and matches. I still had them on me and was glad to get rid of the smell. At first I had thought the stink would keep the mosquitoes at bay, but they love the scent of heathen smoke sacrifices. Teeta took tobacco and matches from me and used his right hand to throw them into the water over

his left shoulder. 'Why are you doing that?' I asked. He said that this was the place where one had to offer a sacrifice to the sea god, to ensure a safe return. Although he was a parson's son, Teeta's Christian faith did not seem to have a very deep and convincing foundation. Like everybody else when the pastor was not watching, he still propitiated the spirits for safety's sake. We were half-way there when he paid tribute to the sea spirit.

Thousands of crabs were scuttling along the beach of north Tarawa. Prepared in advance, we took Teeta's polite announcement that he had to ask the natives about the location of our circle as a necessary civility. We waited. We waited three whole hours in the burning sun. Had it not been for the Reverend Scarborough's impressive warning, 'Never bathe in the sea,' we should have been only too glad to plunge into the clear water. Friendly, smiling islanders paid their respects to us and gave us coconut milk to drink.

Once again Teeta returned with a small Toyota lorry. Again he was accompanied by an old man who showed the way to the magic circle. He guided us to a clearing in the tropical undergrowth with a square marked out by stones inside it. At the top, outside the enclosure, was a large inverted mussel. Thank heavens it wasn't a tombstone! That was my first thought and then I was silent.

Our trio exchanged hesitant looks. The talk of dangerous magic had infected us. We suddenly felt rather faint-hearted but sensed that we had to put on a brave front for the anxious natives. Teeta's gaze rested on us, silently saying, 'Friends, give up! Don't tempt the spirits!'

We took our bearings. Before us lay a circle 14 m in diameter and in its centre a square with sides of 5.1 m marked out by small oblong stones. This square was the only remarkable feature. Not a plant, not a blade of grass grew in it, although there was luxuriant vegetation all round. Admittedly the square was dotted with pebbles, but there was still enough space between them for something green to thrive. In the tropical hothouse heat, ground that is cleared today is overgrown tomorrow. Moreover, no palm trees grew towards the zone that was taboo, but that could have been coincidence.

In spite of the head doctor's warning not to expect any-

thing colossal, we were disappointed. To look as if we were doing something, we aimed our Geiger counters along both diagonals of the square. The pointer did not budge. When Willi made to enter the square, Teeta held him back in an iron grip. This was very odd, because we had not had to appease any evil spirits with vile-smelling tobacco. Like spectators watching a big match on the centre court at Wimbledon, the natives could not take their eyes off us.

We paced off the ground close to the magic circle, but found absolutely nothing worthy of note, just jungle full of rampant vegetation. It still seemed odd that it came to an abrupt halt outside the circle. Was there a family clan which kept it clear—because of tradition or to make fools of outsiders? Why should a family lumber itself with this work just for the sake of a practical joke? Conditioned by the climate, the islanders make only the minimum effort needed for existence.

I approached the old man and asked him if there was a priest or village sage who could tell us about the island's past. 'Eng, eng,' he nodded and led us to a hut outside which a corpulent man sat like a Buddha. Forewarned, I fished for tobacco and matches. The Buddha lit the smoke sacrifice and we crouched in a half-circle round him, like the others.

In guttural English that grated on our ears, the Buddha told us that the circle we had seen was reigned over by the oldest and mightiest of the spirits. He would not tolerate any kind of life in its vicinity and even killed birds which flew over it. There were a few more similar areas on the island, but the one we had seen belonged to a powerful spirit. Anyone who disregarded warnings of his power would soon pay for it with his life.

'How does he die?' I wanted to know.

The Buddha intoned, 'We do not know, no one knows, the spirit kills with his power.'

For years I have visited the holy places of all kinds of religions at which miracles have happened. These miracles happen at Lourdes, Fatima, the Convent of San Giovanni Rotonda, Guadeloupe and Iborra; they happen all over the world. The prevailing view is that faith, the ardent will to be healed, works the miracle. There must be a reason for miraculous cures attested by doctors. It is a positive miracle-

working faith which only unbelievers dismiss contemptuously as superstition. I asked myself whether negative results could not be affected by similar psychological impulses. Frivolous visitors, permeated with the deadly power of the magic circle, still close to belief in gods and spirits, suffer death or disease as soon as they enter the zone which is taboo. Perhaps that is the explanation of the events which the islanders have been recounting since the distant past and in which they still believe.

I share the medical superintendent's view that mysterious magical phenomena will be given a logical scientific explanation at some time or other, but I doubt if they will be found by academic thinking. Research which seeks to measure, count and weigh everything categorically excludes what cannot be weighed or measured. But there are powers which cannot be captured even with the most delicate technical instruments. The Kiribatis' early forefathers related (and their living descendants confirm it) that the magic circle brings death. I could not find anything extraordinary, but I am not arrogant enough to claim that the islanders are the naive victims of their belief in spirits. So long as unusual phenomena cannot be measured, weighed and counted, they will be dismissed as miracles or superstitions. Until the day when a convincing explanation is given, the stone circles of Arorae can be registered as a miracle, with the proviso of Michael Faraday (1791–1867) that nothing is too wonderful to be true.

Teeta did something I would not have dared to do as a foreigner. He stopped the garrulous Buddha in full flow and urged us to leave. He wanted to finish the trip through the lagoon before the onset of darkness so that his watchful pilot's eye could steer us round the knife-sharp coral reefs which had sliced through many a boat before. In addition, sharks and octopuses wanted their supper in the evening.

We were happy to follow our dark angel, because we had no desire to watch a fight between a native and an octopus. One man acts as living bait and swims into its clutches. Then at the precise moment when the octopus wraps its tentacles, tactile organs for seizing its food, round its prey, a companion leaps into the water and kills the creature by biting it between the eyes.[1] We did not witness one of these gruesome combats,

although they are still supposed to take place as a sport in the southern Kiribati Islands. Thank heavens, too, we did not have to see sharks being caught. Once they have been lured by bait of meat, divers cut up their bodies with sharp knives. Sharks' genitals are highly prized by the islanders as aids to virility—sex aids from the sea. The method of killing smaller fish as long and as thick as an arm is unchanged. The fisherman sticks the hooked fish in his mouth like a flash and bites its head off.[10] It is said that many natives only lisp because the fish bit quicker than they did.

The ebb tide dragged our boat more than a kilometre out to sea. Ten islanders waded out to us. The sun sank on the horizon in a purplish-red ball of fire. With the help of the islanders we pushed and dragged the boat in. Crabs crawling over our feet and calves felt most unpleasant. The lights of Baraiki twinkled in the darkness and were reflected in the entrance to the harbour of south Tarawa. Beach fires flickered. Oil lamps made of coconut shells smoked in the huts. The palm groves were full of lovers. Songs floated over this island paradise. Night had fallen on the Kiribatis.

My curiosity was not satisfied; there was still a trail to be pursued. I gave Teeta the Reverend Scarborough's letter to read.

> I mentioned the footprints of the giants said to be the footmarks of the gods as they walked throughout the islands. They are very large, perfectly shaped footsteps in the rocks and are found on nearly all the islands. Some are to be found just outside the village of Antebuka, almost on the sea side of the island, but there are much better examples on other islands. If you walk about 300 yards from Antebuka towards the nearest habitation you will find them in the rocks about 50 yards from the sea-line. If you have some idea that perhaps the islanders themselves have carefully carved these prints in the rocks . . . then you must ask yourself why? For what purpose should the islanders on 16 islands undertake to manufacture marks in the hard rock? Bearing in mind that they have little or no tools, that would be nonsense. The local verbal customs say that they are the footprints of gods who came from heaven.

The fact that we had not yet seen the Reverend Scarborough's footprints did not mean much, because we had not asked about them, but it seemed astonishing that even Teeta looked at us uncomprehendingly. But the hunting fever had us in its grip; equipped with such precise data, we set out hunting for the fourth time.

The area so accurately defined in the letter was an absolute abomination. If my readers might suspect from previous descriptions that Tarawa was a paradise of ideal beauty and sweet odours, I must let them see the other side of the coin. The stretch of 50 yards from the waterline was one big cloaca.

The islanders have no WCs in or near their huts. Since the days of their ancestors they relieve themselves on parts of the beach. So that the backsides of their lovely bodies are not pinched by octopuses or tickled by other water fauna, huts on piles have been built in the water. In urgent need they can reach across two palm trunks which sway like tightropes. At flood tide natives drunk on sour toddy can relieve themselves into the sea, at ebb tide on the rocks far below. These WC huts are insular communications centres. Kiribatis crouch next to each other on the thunder seat for hours, exchanging news—a community united in the same business.

This centuries' old custom of leaving human waste on the beach for the sea to remove had a logical extension when the blessings of civilisation came to Kiribati. Unlike human refuse, tin cans and Cola bottles, plastic wrappings and broken tools, do not decay, nor are they all carried far out by the tide to destruction. Back from the sea, they disintegrate on the beach—slowly or not at all.

This was the aspect of the 'catchment area' pinpointed so accurately by the Reverend Scarborough. After our previous experiences, we had to take this indication seriously, too. Whether our search was too cursory in the absence of gas-masks or because we were upset by the news that flying would stop owing to the strike, I don't know, at any rate we left the beach near the village of Antebuka without stumbling on the giants' tracks.

After lunch, Teeta came up, all smiles. He had spent the break doing some research. He said we ought to go to the village of Banreaba where there were footsteps of the kind

we were looking for on land belonging to a relation of his. The plot was called Te Aba-n-Anti—'Place of the Spirits'—or Te Kananrabo—'Holy Place'.

This information actually did lead us to footprints of various sizes. A giant must have walked on incredibly large feet to leave prints 1.37 m long by 1.14 m wide stamped in the rock like greetings from prehistory. One left footprint had 12 toes and a palm tree was growing out of it. Odd. The giant with the enormous feet was obviously accompanied by others with smaller feet, some of them presumably children. Most footprints had six toes on both feet and were impressed a good centimetre into the ground.

In the library I found a copy of *The Footprints of Tarawa*[11] edited by the Polynesian Society. It had informative footnotes about the giants' prints. According to legend, they were made by the giant Tabuariki, who was so tall that he could pick coconuts from the tops of palm trees without stretching. He has his place in the legend 'Te Bongi Ro', the black darkness. According to this tradition he was one of the second crew of celestial beings who are supposed to have landed on the island of Banaba. And where does the palm tree come from? In the fortieth year of this century it was planted by a clergyman so that it would overgrow the legend about Tabuariki, the gentle art of botanic missionary work.

The Footprints of Tarawa, which was scrupulously documented, mentioned several places with giant's footprints. I would have loved to visit them, but the comparatively close targets could not be reached without a boat or an aircraft. Owing to the strike they were as remote as the moon. So I had to leave the sites near Banreaba for others to investigate.

According to the most recent research, the Kiribatis have been inhabited for at least 3000 years. Three thousand years without a written tradition is a very, very long time. The 'gods' were quite right to leave the rock with permanent traces which would testify to their presence into the distant future.

We must ask ourselves how such footprints originated. An obvious idea is that they were chiselled out of the rock. The

On the edge of the village of Banreaba we found prehistoric footprints, both gigantic and normal. Most of them have six toes on each foot.

samples that we saw and photographed did not give this impression. They had natural curves round heel and toes. The alternative theory that they were made by people of enormous weight collapses. Many tons would have had to be pressing on the soles of the feet. More conceivable than that is the absurd idea that the landing legs of a scout-craft from a spaceship were perpetuating themselves. More plausible is the possibility that the prints originated when the rock was still hot and pliable—or had not yet acquired its present-day form. The prints of naked feet pressed into a layer of fine volcanic ash can become tufa by weathering and so preserve the traces. Even the outlines of feet pressed into clay can dry out over the centuries and petrify. I do not know when the giant footprints to be found in many parts of the world will find a convincing scientific explanation so long as visits by extraterrestrials are excluded.

We learnt from Gil Butler that an Air Nauru plane would fly to Nauru next morning, possibly the last for some time as the strike was disrupting flights more and more. We would willingly have tacked a few days on to our original week and—inspired by the islanders' timeless sense of time—we almost did so, if we had not faced up to our Western end-of-term feeling on the eve of the flight. We ate our supper sadly as if it had been a last meal before an execution. We tried to work out if the long journey to the Kiribatis had been worth while.

We had seen one of the giant's graves mentioned by Reverend Scarborough, we had seen the magic circle. Now we knew that this evidence of a distant past existed, that they were still taboo to the present-day islanders, even though they all profess to belong to an imported religion. We could not fathom the reasons for their fear of the magic circle. And then there were the navigation stones whose goals we had verified with maps and compass. For how much longer would they bear silent witness to the navigational abilities of primaeval islanders? Exposed to wind and weather the stone mysteries will crumble to dust. The giant footsteps also existed. The Reverend Scarborough who had spent three and a half years on the island had given us hard facts.

The best kind of proof of the former existence of ex-

traterrestrials is in the traditions. Nareau, who flew through the cosmos while asleep and was awoken by a cry, the bird Rupe, who appeared noisily and evacuated the inhabitants of an island, the names of worshipped beings from space, whose names stand as synonymous for the first gods.

Bwere was there to say goodbye, bringing greetings from Teeta's friendly mother. He smiled indulgently.

'In a short time on our islands you have seen mysterious places which I haven't seen in my 35 years. You have achieved much, but I don't envy you—I don't want to be a European. When do you rest, when do you have inner peace? Where do you get the energy for your frenzied existence? You reach your goal, but you squander your life.'

On the edge of the runway, with the engines turning, I could not explain to Bwere what drove me on or where I got the energy from. It is the pressure present even when I am asleep, it is the desire to get on the trail of the 'gods' regardless of where in the world they manifest themselves.

Teeta, our dark angel, stood to one side. He looked at me trustingly. He asked, 'Will the old gods return?'

'They will, Teeta, they certainly will.'

Below us Tarawa floated in the ocean like paradise lost.

2 For Some Reason or Other

'What a sad age
When it is easier to smash
an atom than a prejudice.'

Albert Einstein (1879–1955)

The hanging stones of Stonehenge, near Salisbury, have inspired many different opinions about their origin and significance. I thought that nearly everything had been said on the subject, but scientific research into Stonehenge and other similar strange stone groups in recent years makes the dead monoliths as evergreen and topical as ever. It is as if they themselves were continually asking permission to take the floor. With so much new and exciting material, I feel as if the stones are addressing me; I cannot relegate them to the archives yet.

Every tourist in England is advised to look into the mystery of these silent witnesses from prehistoric times. He will not have to look far. There are more than 900 noteworthy stone circles dotted over England, Scotland and Ireland. This journey into the past along good roads is pure pleasure—once you have got used to driving on the left. For long distances you drive through what might be considered parkland.

But your holiday enjoyment becomes an adventure when you visit the alien world of the great stone blocks, the megaliths, and try to imagine yourself in the age when the mysterious complexes originated. You soon lose your way in a maze of question marks. What message have these stone monsters? Have they an intelligible meaning to us? Can they be important to us in any way?

Below I give a catalogue, a small selection of worthwhile sites to visit.

Scotland

— The stone circles of Brodgar and Stenness are on Mainland, the largest of the Orkney Islands, about 16 km west of the town of Kirkwall.

— The stone circles of Garynahine, Cnoc Fillibhir and

Callanish are on the west coast of the Island of Lewis in the Outer Hebrides, about 22 km west of Stornoway.
— The stone circles of Cullerlie and Sunhoney are 21 km west of Aberdeen on the B9119, a road branching off the A944, which runs from Aberdeen to Alford.
— The stone circle of Old Keig is located only 5 km from Alford.
— The stone circles of Balquhain and Loanhead of Daviot lie 26 km north-west of Aberdeen, 5 km from the village of Inverurie, to the right and left of the A96.
— The stone circle of Temple Wood is 1.6 km south of Kilmartin on a small country road which branches off from the A816.

Ireland

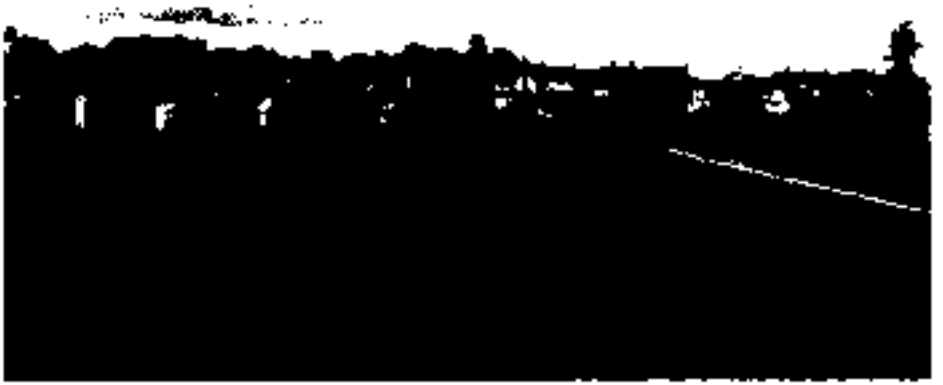
— The stone circle of New Grange is located 42 km north of Dublin, 5 km east of Slane, on the road to Drogheda.
— The stone circle of Lios is 19 km south of Limerick, 5 km north of the village of Bruff.

England

— The stone circle of Swinside is 8 km north of Millom on the north-west coast.
— The stone circle of Carles Castlerigg is 1.6 km south-west of Penzance.
— The stone circle of Stanton Drew is 11 km south of Bristol.
— The big stone circle of Avebury is 10 km west of Marlborough, in the middle of Avebury village.
— The stone circle of Rollright is north of Oxford, some 3 km north-west of Chipping Norton.
— The much discussed and much written about stone circle of Stonehenge lies north of Salisbury, 4 km west of Amesbury. Just after the A303 and the A344 fork you stay on the well-signposted A344.

Those are the fifteen best-known megalithic monuments

The stone circles of Avebury.



I have visited. To my way of thinking Rollright and Stonehenge can serve as representative of the other 900, for they were the scene of the exciting discoveries, the results of which are undoubtedly applicable to the other megalithic centres as well.

The mists and shadows of 5000 years of past enshroud Stonehenge. The experts are at least unanimous on this dating. They date the first stage of its construction to 2800 BC, in the Neolithic, the Late Stone Age, the third epoch in the history of mankind that began in the sixth millennium BC. The great pyramid of Cheops in Egypt had not yet been built, nor was the Sphinx crouching in the desert at Gizeh.

If we accept the most widely held hypothesis, some architect must have set to work around this time. It is hardly credible that he undertook the planning on his own account without a patron or employer. The complex was on too gigantic a scale for that. Who were the builders? Stone Age priests or mighty rulers? We cannot find out, for writing had not yet been invented, a state of affairs which must certainly have been a major obstacle to the extensive planning.

The brilliant architect who made a start at some point in time could refer to centuries of observations of sun, moon and stars, or so it seems if we look at the rock-hard facts. Many generations must have marked out the light and shadow of sunrise and sunset on the ground, and studied the phases of the moon and movements in the firmament. We shall never know how these astronomical data were handed down, for, as I have said, there was no writing then. All we know is that when zero hour came in Stonehenge the architect must have had a mass of proven information at his disposal and that the wealth of accurate data was collected through observations over long periods without any kind of technical aid.

Ostensibly on the basis of this traditional knowledge and with a commission unlimited in scope in the bag the architect took a look at his workmen's tools, which were made of flint, bone and wood, and realised that his task of erecting a temple for celestial observations would take a thousand years. So he relied on future generations carrying on the good work after his impressive beginning, especially as the precision he sought for did not permit botched workmanship. This Stone

The trilithons of Stonehenge.

Age farsightedness, this belief in the future, is astounding.

The first stage consisted of a circular enclosure with an entrance of two large blocks of stone and the so-called Heel Stone outside the circle. Later a second stone circle was set up inside the wall-like enclosure for accurate predictions of celestial phenomena, e.g. sunset at the winter solstice or moonrise at the summer solstice. It was marked out by 56 holes which probably held poles in order to aim at specific sight lines.

So that they could move accurately within the mathematically fixed points, the constructors adopted from the 'international bureau of weights and measures' the Megalithic Yard of 82.9 cm, which remained the unit of measure for thousands of years.

The first architect was not only a brilliant mathematician and astronomer, he was also a formidable clairvoyant. He included 4.5 tons of heavy stone colossi in his plan. Seven hundred years after building was begun, these bluestones—

so called because of their colour which shows up best when they are wet—were transported over a distance of 400 km. It is noteworthy that they were envisaged in the original plan.

When I first began a thorough study of this extraordinary structure I asked myself how did the collected knowledge get into the hands and heads of the first Stonehenge master builders when there was no writing. For all archaeologists agree that there was none. And I wonder how they could anticipate the future and make use of the theorem of Pythagoras, who lived c. 570 BC, i.e. more than 2000 years after building began, in the ground plan of Stonehenge. I do not understand it. Which came first, the chicken or the egg?

King James I (1603–25) wanted to know more about the confused mass of stones at Stonehenge. And as kings can act without parliamentary authorisation, he wasted no time in commissioning his court architect and stage designer Inigo Jones (1573–1652) to get to the heart of the matter.

Jones was impressed by the primaeval complex. He noted some 30 stones, each weighing about 25 tons and 4.3 m high, arranged in a recognisable circle, even though some of them had fallen. He observed that the standing stones had projecting pegs and that the lintels had holes to receive them.

Jones sketched a monolithic circle of five great trilithons made of sarsen, a greyish-yellow sandstone, and the massive undressed Heel Stone outside the inner ring.

What did Inigo Jones tell the king? He said that Stonehenge was the ruins of a Roman temple inscribed to Coelus.

Some years after this investigation a trilithon—two upright stones with a lintel—fell on to the so-called Altar Stone. On 3 January 1779 the next of the stone gateways collapsed.[1] The teeth of time were gnawing at Stonehenge.

It looks as if kings took more interest in our mysterious past than the potentates of our own day do. They can barely cope with the present, let alone the future. King Charles II commissioned John Aubrey, an antiquary, who had studied the stone circle at Avebury 30 years previously, to visit Stonehenge. In 1678 Aubrey registered 56 holes, which have since been known as Aubrey Holes.

What did Aubrey tell the king? He said that the idea of its being a Roman temple was nonsense; it was much more probably an ancient Druidical sanctuary.

The Druids (Irish: great sages)?

These priests of the Celts, said Aubrey, were versed in a secret doctrine and were far advanced in astronomy. They could be reasonably accepted as the master builders of the enormous complex. Members of the present-day Order of Druids still assemble at Stonehenge at the summer solstice and sing as they await the sun, which rises exactly above the Heel Stone, looking eastwards from the middle of the Altar Stone.

Over 200 years later, in 1901, Sir Joseph Norman Lockyer (1836–1920) looked into the phenomenon of Stonehenge and he was the first astronomer to make a fundamental study of the stone witnesses from ancient times. Lockyer was an outstanding expert in his field. He was Director of the Solar Physics Observatory in South Kensington, a pioneer of astrophysics and the discoverer of helium, which was unknown on earth until then.

Lockyer's astronomical studies led him to date the monument to 1860 BC, plus or minus two centuries. It makes no difference. This date was long before the Celtic period. Celts are first heard of in the sixth century BC. That put paid to the theory of a Druidical sanctuary.

Investigation of Stonehenge became more active in our own century. Scholars found flint axes and sandstone hammers, and they were puzzled about the origin of the material. There were sandstone quarries within a 30 km radius, but no place where bluestone could be found. Nevertheless, bluestones were there in profusion. In 1923 Dr Thom, working for the Ordnance Survey, took over the quest and found that the bluestones came from a small deposit in the Prescelly Mountains in Pembrokeshire. The discovery had one blemish. Prescelly is 385 km from Stonehenge.

If we accept Prescelly, we must try to solve the problem of how transport to Stonehenge was effected thousands of years ago. By common consent the archaeologists put forward the solution they always favour when they are at a loss. The gigantic blocks of stone were dragged from the Prescelly Mountains on sledges to a river where they were loaded on to ships from rafts. Professor Atkinson of the Archaeological Department of Cardiff University says that the bluestones were transferred to boats which consisted of several dugout

tree-trunk canoes laid next to each other and which could carry the stones on a communal deck.[2]

An experiment was carried out in 1954. Three canoes built of elm boarding were fixed together by four transverse bearers and floated on the River Avon. A replica of a bluestone in reinforced concrete was lowered on to the vessel. Four public schoolboys punted the cargo upstream. In a second experiment, another team of 14 schoolboys dragged the block up a slope on a sledge riding on roughly fashioned rollers.

Puzzle solved. Puzzle solved?

Yes, if we attribute to the Stone Age men resources they did not have. Even the second phase of construction around 2100 BC still took place towards the end of the Stone Age. So scholars have frivolously or falsely assumed the availability of appliances and workshops that did not exist. For example, shipyards to build models for the specific task, ropewalks to make the ropes for the heavy loads, cranes, even of the simplest type, for loading, and last but not least a transport organisation with a staff of experts such as cargo foremen and skilled dockers. Altogether a couple of assumptions too many.

If anyone objects that the islanders had already left the Stone Age around 2100 BC, I must explain one thing. It has been proved that the bluestones were present *before* the second building phase, i.e. before the erection of the sandstone precinct! Then the only conclusion left is that the men of the Late Stone Age had a lot more technical know-how than scholars allow them.

This contradiction has not escaped Professor Atkinson's notice, for he admits, 'We shall never know exactly how the stones were transported'.[2] That is an honourable academic admission. Thank you.

On 26 October 1963 the scientific periodical *Nature* published an article by the astronomer Gerald Hawkins of the Smithsonian Astrophysical Laboratory, Massachusetts. Hawkins wrote that Stonehenge must definitely have been an astronomical observation station—24 horizon markers and sighting possibilities indicated astronomical connections. Hawkins proved these claims in his book *Stonehenge Decoded*[3].

Hawkins wanted to know whether the 56 Aubrey Holes in

a straight line were connected with each other and the Heel Stone, but also with the bluestones and the trilithons. He did what is the practice nowadays when many different possibilities exist. He fed 7140 possible connecting lines into a computer and programmed it to work out whether specific sighting lines were more frequently in connection with stars than the chance expectancy.

The facts are staggering! The whole of Stonehenge proved to be one great observatory, a complex which was capable of predicting a chain of astronomical data. Thus the Stone Age astronomers knew that the moon oscillated between a northernmost and a southernmost point in exactly 18.61 years. From the centre of the circle they could observe sunrise over the Heel Stone at the summer solstice. Not only could they predict eclipses of the sun and the moon, but also sunrise on the day of the winter solstice and moonrise at the summer and winter solstices.

Such a revolutionary claim has, of course, been disputed.

Professor Atkinson, the 'Pope' of Stonehenge archaeologists, made fun of 'Moonshine about Stonehenge' in the periodical *Antiquity*.[4] His world picture had collapsed!

So how could Stone Age men have built such accurate complicated know-how into 'their' Stonehenge? Hawkins and Atkinson climbed into the ring, but there was no outright winner; they sparred cautiously and came to a compromise. And when Sir Fred Hoyle had intervened with the elegant pen he wields as an SF author, to write 'Speculations on Stonehenge',[5] it was agreed, after the correction of some minor computer data, that Stonehenge was a Stone Age observatory which provided extraordinary astronomical data.

Professor Alexander Thom also used a computer in his investigation of hundreds of stone complexes in France and England. He fed masses of circles and lines marked by megaliths into the objective electronic brain and asked it for reference points in the starry sky.

The results left no room for doubt. More than 600 of the monuments examined had definite astronomical coordinates! The stones spoke and their message was that their master builders not only aligned their sights on sun and moon, but also observed the paths of many fixed stars, such as Capella, Castor, Pollux, Vega, Antares, Altair and Deneb.[6]

It was Professor Thom, too, who discovered the unit of measure which was universally used by the builders of such complexes. Thom called it the Megalithic Yard. It measures 82.9 cm. Felix R. Paturi drew this conclusion:[7]

> The almost incredible identicality of the measure of length in Scotland, Wales, West Prussia and Brittany, with occasional deviations of a few milimetres, lead to a very interesting conclusion. Four thousand years ago there must be something like a central 'Bureau of Weights and Measures' somewhere in Europe that supplied standard wooden measuring rods to different parts of the continent. For if every community had received the rods from a neighbouring village, instead of the central office, errors in length would certainly have been much greater.

The geologist and mineralogist Vladimir Ivanovich Avinski, USSR, had a fantastic tale to tell. In an interview with the news agency Tass[8] he explained that he and his team had identified a pentagram in the geometry of the five Stonehenge trilithons, the 30 stones in the circle and the 56 Aubrey Holes from which the magnitude of the five planets nearest the earth could be read off. Avinski asserted that the order of magnitude of Mercury, Venus, Mars, Jupiter and Saturn did not differ from that known today by more than 1 per cent. What about that! Naturally we ask ourselves how Stone Age men made such calculations without the aid of modern telescopes.

Astronomy is one of the oldest branches of science; archaeo-astronomy is one of the youngest. It has only existed for a few years. It is an interdisciplinary science, combining the techniques and experiences of modern archaeology with the numerical certainty of practical astronomy. A few dozen experts are already engaged on it,[9] starting from scratch, but they already include celebrated names such as Gerald Hawkins, Alexander Thom, Anthony Aveni, the physicist John A. Eddy and the initiator Edwin C. Krupp, Director of the Griffith Observatory, Los Angeles.

I like this recent branch of science. It seems to me to prove that authors like myself who cleared the ground for imaginative realism were not so far off the mark. Can it be that we

were responsible for bringing archaeologists and astronomers round a single table?

My affection for archaeo-astronomy is unchanged even when its representatives are obviously unfriendly to us. Given any outlook on everything human, I even understand that they must keep Immanuel Velikovski, Däniken and others at a distance, so as not to lower their reputation in the circle of academic demigods and infallible scholars, for in their eyes we are only visionaries and cranks. Nevertheless the archaeo-astronomers themselves must stake out their claims with speculations and theories, like us, and seek proof of their assumptions, like us.

If you venture to offer the public something new, you must not be squeamish. You must accept attacks, even if they hurt. But attacks should be fair and based on facts. Dr Edwin C. Krupp has said I have cheated with my information. Dr Krupp says I claim that the tracks on the plains of Nazea were laid out by extraterrestrials. Although Dr Krupp uses quotes, my readers know that I never offered the explanation imputed to me. I merely *recommended it as an intelligent assumption.* It does not make a good impression for a new science to cheat. It is certainly not in the old academic tradition.

It would be interesting to discover from archaeological finds, in so far as they allow us to suspect a connection with astronomy, how our early forefathers acquired their astounding knowledge of the firmament. To reach that goal a young science should be more courageous. It can and should include outsiders' ideas in research. It can march forward without blinkers through the cramping legacy of professorial ballast. It does not. So I am astonished by the programme of archaeo-astronomy which leaves no room for the possibility of an extraterrestrial visit. It would only be commonsense to bear these ideas in mind so that the facts do not come as a shock one day. Perhaps Edwin C. Krupp would not then write such incomprehensible sentences as: 'Astonishingly enough, advanced astronomical knowledge is hidden in the first plan'.[9] He is puzzling about Stonehenge, but he cannot get over his astonishment.

Stonehenge is like a second home to Professor Alexander Thom and his son Alexander, and they keep an open mind when discussing it.

> It is hard to imagine how the master builders of the megalithic designed and constructed their monuments without these [astronomical] aids and yet that was exactly what happened . . . The megalithic builders experimented with geometry and tabulated rules of measurement. We do not know what relation these conceptions had to their other institutions but *for some reason or other* the mathematical principles they investigated were important enough for them to be applied to the stone.

OK. To me Stonehenge is an absolutely classic example of the need to take a visit by extraterrestrials into consideration.

Who are they, where are they, the beings who thought out the buildings at Stonehenge and Rollright in advance? They are all traced back to the sacrosanct theory of evolution. In other words the builders of the megalithic complexes had predecessors who, generation by generation, collected, increased and handed on small portions of knowledge. So where are these climbing monkeys on the ladder of wisdom? They do not exist. The megalithic architects had all the necessary mathematical and astronomical basic knowledge at their fingertips, and even had a unit of length. From the start and without further-education classes they knew all about types of material, since they brought special stone for special purposes from a distant site. Because it had special properties?

The pseudo-scientific fairytale hour can now begin!

I read [10] that around 2800 BC the northern half of Europe was drier and warmer than today and that large tracts of England were covered with dense forests in which herds of cattle grazed, and that the scanty population was the reason for the considerable wealth of the stockbreeders.

This restricted state of trade and husbandry continued. It is assumed that the population density in 2500 BC was two persons per square kilometre. There were no villages or small towns. So where was the demand for meat when there were no buyers at the market?

Take it easy. The fairytale hour about political economy has a point. The stockbreeders' wealth gave them a lot of leisure and they used it to produce creative ideas about the

struggle for existence. 'We can ascribe the idea of Stonehenge to these stock farmers simply because their life was monotonous and primitive.'

Idleness is the beginning of all wisdom! If we actually follow the culture of the stockbreeders, it is not revealed in its materials, but in its great feats of memory. Rabbits out of a top-hat—memory must appear. Obviously, for the Stone Age men could not read or write. Stonehenge—magicians of the world unite!—the product of a brand-new culture, the so-called memory culture. Good heavens! Stone Age geniuses!

Stockbreeders and farmers tilled their fields with sharpened stones or antlers. Naturally a king ruled over them and their families and alone or with the help of his wise priests controlled everything. Then one fine day he ordered a start on the incredibly productive work of covering the British Isles with stone circles à la Stonehenge.

Why? For some reason or other. One of the most stupid reasons is that the priests asked for the complexes so that they could at last predict the seasons, calculate neap-tides and spring-tides and foretell eclipses of the sun and moon. In other words, the priests were demanding a calendar! The result being that gigantic stones had to be set up, in the absence of writing, so as to reveal what everybody could observe without any trouble: the daily rise and fall of the tide, spring-tides occurring at two-weekly intervals, the rising of the sun on the days of the summer and winter solstices. Stone Age men, being closer to nature than we are today, could follow all that from their huts or caves. They needed these gigantic complexes which took centuries to build to determine such recurrent events? Sheer nonsense.

In 1979 the highly regarded American periodical *Science*[11] carried an article about a simple calendar, thousands of years old, which the Indians invented in Chaco Canyon, New Mexico.

The Indians noticed that the sun's rays described a recurring curve through a crack in the rock during the course of the year. They marked this by scratching a spiral at the point where the light rays reached the highest point. If the light rays traversed the 40 cm high spiral in exactly 18 minutes, it was the summer solstice. From a nearby crack in the rock another ray of light cut a smaller 13 cm spiral. That meant

the onset of autumn or spring. If both strips of light formed a tangent to left and right of the big spiral, it was the winter solstice. It was as simple as that.

This article proved that monumental buildings for calendar purposes were unnecessary even for simple societies. Yet the Stonehenge architects were by no means primitive, as their legacy shows. Stones were not shoved about for centuries just to make the priests a present of a massive unwieldy calendar. Even Stone Age men were endowed with *reason*.

In all ages one really important reason has inspired men to impressive extraordinary achievement—religion. So we should ask in which gods' honour monstrous buildings were erected in the Neolithic period, and we should check whether certain localities seem to be predestined for the purpose and why heavy stones and not light wood were used. Why were certain types of stone preferred—at Stonehenge dolerite and rhyolite.

A scientific by-product points the way to a trail that is still warm.

Ancient traditions tell the story of the magician and prophet Merlin. In the year AD 573 he is supposed to have been wounded in battle, to have fled to the forests of northern Scotland and lived there among the wild beasts for half a century. It is said that he acquired the gift of prophecy during this compulsory seclusion in the bosom of nature.[12]

Merlin the magician emerges as counsellor to the fabulous King Arthur, who is recorded in legends from the sixth century. There is no definite information about him but the Arthurian legend persisted and acquired literary fame, from the king's birth when Merlin protected him to the Round Table at which Merlin sat as adviser. The court of King Arthur has been celebrated as the model of knighthood, from Wolfram von Eschenbach's *Parzival* to the musical *Camelot*, in which Richard Burton starred on Broadway.

King Arthur is supposed to have held court with beautiful ladies and noble knights at Castle Camelot in the county of Monmouth. Twelve ambitious knights with no distinction in rank could sit at the *round* table, at which wise Merlin gave advice. So the round table was invented for knightly heroes. It has salvaged protocol in many a tricky diplomatic situation. Every power is at the head of a round table!

If Merlin only appeared at the Round Table meetings, he would be uninteresting in connection with Stonehenge. But this multi-purpose magician also appears in a work by Geoffrey of Monmouth, Bishop of St Asaph: *Historia de Gestis Regnum Britanniae*. It is not a historical work, but a historicising narrative in the style of Homer's and Virgil's epics.[13]

Geoffrey introduces Merlin as the magician and steward of the British usurper King Vortigern. This fine monarch had 460 nobles treacherously murdered at a council. When he himself was beheaded, his rightful heir King Aurelius Ambrosius wanted to erect a monument to the 460 murdered nobles. Magician Merlin gave this advice:

> If you want to grace the burial place of these men with a work that shall endure for ever, send for the Giants' Dance that is in Killaraus, a mountain in Ireland. For a structure of stones is there that none of this age could erect unless he combined great skill and artistry. For the stones are big, nor is there stone anywhere of more virtue; and, so they be set up round this plot in a circle, even as they now be, they shall stand for ever . . . For in these stones there is a mystery, and a healing virtue against many ailments. Giants of old did carry them from the farthest ends of Africa and did set them up in Ireland, when they lived there.[14]

The King took Merlin's advice and sent a whole army to Ireland, but they had to give up trying to move the gigantic stones. According to Geoffrey of Monmouth, it was Merlin the magician who managed to transport the stones to Stonehenge by means of a spell.

Whatever may be discovered about the legend, Merlin cannot have given his advice in the sixth century AD. Building at Stonehenge was demonstrably begun 2000 years earlier. The 'hard core' of the saga must be dated much further back.

That is often the case. Since I have been delving into sagas, myths, legends and old popular tales, I am constantly finding that the substance of such traditions, i.e. the hard core, is often submerged by the embellishments and imaginative

additions of later narrators. The hard core is history that has been experienced and endured. Later generations no longer understand it, they were not present at the event, they added to it or made omissions, but, because the central point of the traditional story was so astonishing, it survived beneath its many accretions.

The hard core of the Merlin legend says that an inexplicable force is at work in certain stones set up in certain places. The 'circle' of the royal Round Table, too, acquires more significance than that of courtly etiquette. People communicate well in a 'circle'.

What special quality do the megalithic stones possess?

Are they merely dead matter?

Can they be 'addressed', once they stand in a specific circle?

Can the stones 'hear', and perhaps even 'answer'?

If only one of these questions could be answered affirmatively, how did the Late Stone Age man see the phenomenon of the stone circles?

The British chemist, Dr G. V. Robins, who specialised in investigating stones, also asked himself some strange questions. He published the first results of his researches into Rollright in the periodical *Alpha*.[15]

The Rollright stones can be reached from London on a pleasant half-day excusion. You take the M40 to Oxford, bypass the old university town and swing off north on the A34 to Chipping Norton. From there you continue on the M44. Four kilometres to the north in the direction of Adlestrop the stone monuments lie to the left and right of the road, on private ground. The owner of the land willingly opens the complex to visitors from all over the world.

The Rollright complex has three parts. It consists of a perfect stone circle with a diameter of 31.6 m known as the King's Men. About 70 m distant from the circle there is a weathered upright menhir, a typical product of the Late Stone Age, called the King Stone. In spite of the teeth of time which have gnawed at it for millennia, it still stands upright, 2.60 m high and 1.44 m wide. To the east of the stone circle there is a group of standing menhirs, though some of them have fallen over. They are called the Whispering Knights.

What can the saga tell us about the goal of our visit?

The ancient Rollright stones are only a half-day excursion from London.

One saga rumours it that the Rollright stones are a king and his soldiers who were turned to stone by a miracle and that there are graves in which the king and his men sleep until one day they awake to life again.

The saga also says that on New Year's Eve the Whispering Knights march downhill to a spring to drink. Another tale relates that an attempt was once made to remove one of the large stones at night to fit it into the pier of a bridge that was being built. Many men and their horses managed to do this, but every morning it lay on the grass again. On repeated occasions it could not be kept in place, so that the bridge builders finally gave up and took the recalcitrant stone back to its original site. Oddly enough only two horses and four men were needed for the return transport.[16]

Equally nebulous stories circulate in our own day. For example, people who have touched the stones claim that they felt giddy. Road-menders talk about hallucinations, illusions of the senses in the waking state, which came over them at

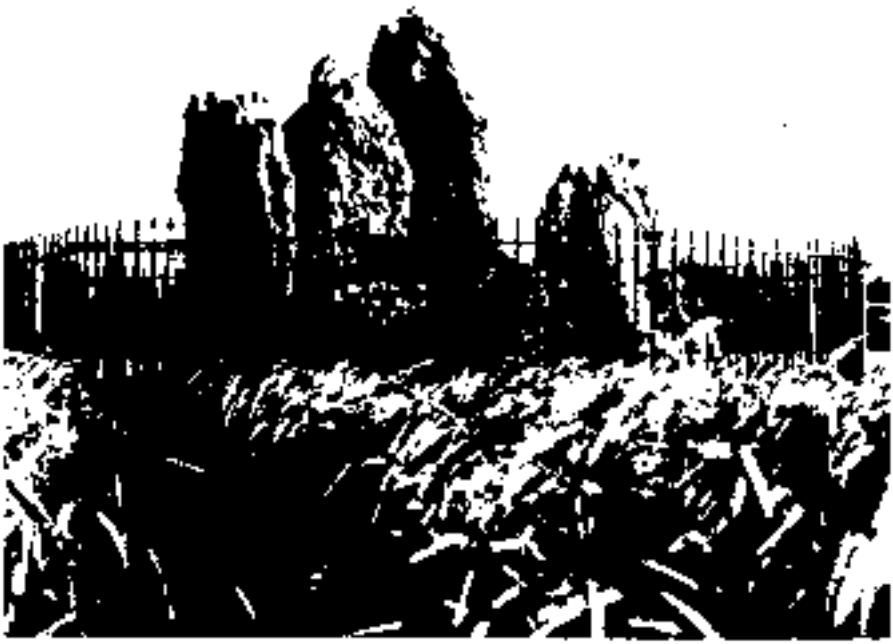
certain times of the day, when they were inside the stone circle. Sensitive people are even supposed to have suffered shocks.

Altogether enough puzzling phenomena to make a scholar like Dr G. V. Robins investigate Rollright.

Dr Robins and his team took as their starting point the fact that most of the stones are silicates, from the Latin *silex* (hard stone). They form about 95 per cent of the structure of the earth's crust. Their own structure exhibits a three-dimensional net of silicon-oxygen chains, atoms that are permeated with ions, such as natrium, kalium and aluminium. The analyst speaks of stones with faulty physical structures, because the geometrical relation between the various atoms in the stone is never the same. Under the electron microscope a fragment of stone gives the impression of a disparate crystal and atom lattice with many holes. The holes in the lattice act like a coarse filter. Where such holes are found, the filter catches other atoms, ions, simple molecules . . . and *electrons*! Like men, animals, trees and all organic matter, stone has a small amount of radioactivity, which comes from the atmosphere, a constant quantity of the radioactive carbon isotope. This radioactivity in the stone is constantly disintegrating and causes continuous change in the atomic lattice. Holes originate, to be immediately filled with ions and electrons. The lattice releases the captured electrons as soon as energy is applied to the stone, say by radiation or great heat. This basic pattern by which 'captured' electrons remain in stone and materials like stone led to a new method of dating things, analysis by thermoluminescence. The material under investigation is heated, electrons are released, reduce their activity to a lower level and give off the difference in energy in visible light. The amount of light can be measured with the technically highly complicated photomultiplier[17] and from that we can find out when a potsherd, for example, was fired hundreds of years ago.

The method can be used on any kind of stone. Stone *x* or *y* or *z* is heated, the electrons leave it and give off light. The amount of light set free is in direct relation to the emission of radioactive rays and so to the stone's age, for the disintegration times of radioactive rays are known.

In other words, the thermoluminescence method reduces



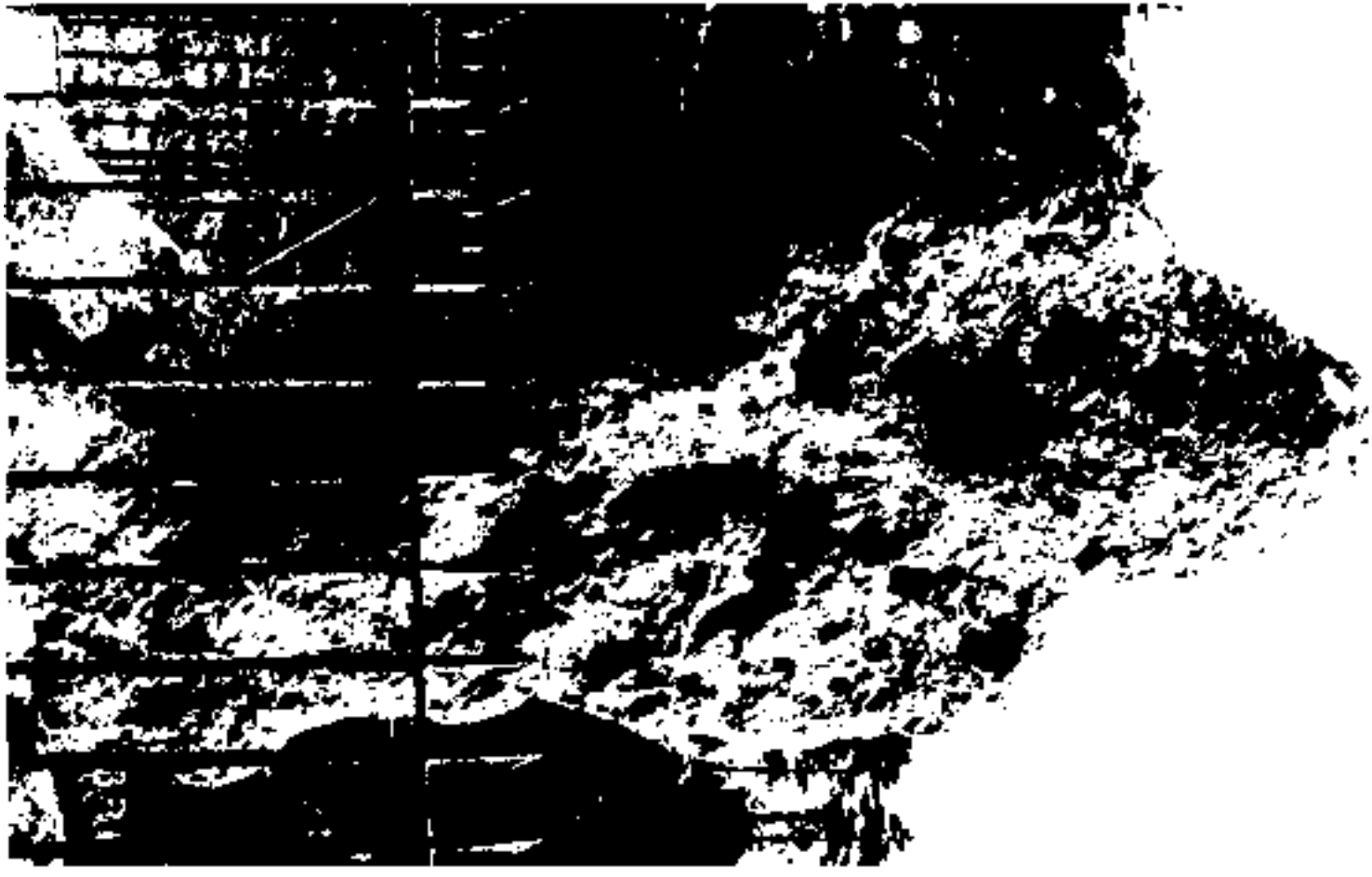
The 'Whispering Knights' can no longer leave their site. They have been railed in.

released electrons to a new level of energy. But, if the electrons are to be measured at their original level, we make use of what is known as electron spin resonance. The transition between two states of energy is effected by microwaves. The stone is exposed to a magnetic field and once again we have a measurable electromagnetic radiation which varies according to the amount of electrons and enables us to decide on the age of the stone.

The earth has had a natural magnetic field since its existence. Magnetic fields originate through veins of metal in the ground. Stones have been exposed to these weak forces for millennia. At all times, we are told, they have minute amounts of electrons captured in the lattice and released again by long-term radiation.

Making use of this knowledge Dr Robins took a decisive step forward.

The transformation of electromagnetic energy into sound is a known physical effect. So Robins looked for ultrasonic



waves near the Rollright stones. In 1978–9 he carried out measurements on the site at various times of the day and night with a perfectly normal ultrasound detector. The detector's protected head prevented interference by chance waves in the micro-range. The scale was graduated from one to ten.

First of all Robins ascertained the basic level of ultrasonic frequencies in the district near Rollright. The values oscillated between nought and one on the scale.

Robins knew that stones radiate rather more strongly at sunrise than dring the day. At daybreak there is a predominance of long-wave rays activating the electrons in the stone.

Then came the first surprise!

The Rollright stones did not begin to emit rays slowly and continuously at sunrise. Unexpected pulsation began in the King Stone and the group of Whispering Knights half an hour *before* sunrise, but not in the precinct of the stone circle. The pulsating effect of the stone and the group reached an incredible seven on the scale, whereas the ultrasonic emission around the stone circle fell *below* the normal level for the district. Two or three hours after sunrise the pulsation suddenly stopped. But, while the reading on the scale at the King Stone diminished, it increased in the stone circle. In the spring of 1979 the ultrasonic activity in the stone circle increased steadily and built up an electric field between the King Stone and the Whispering Knights that pulsated in synchronisation with the ultrasound.

Now for the second surprise!

When a member of the team entered the stone circle during the measuring, the pulsation stopped abruptly. Dr Robins states:

> During all visits at dawn strong pulsation around the menhir as well as on the road and the field between menhir and circle could be observed, yet it stopped as soon as anyone entered the stone circle. This change from intensive pulsations to very weak oscillations below the basic values was repeated during the whole period of observation and was confirmed by a number of observers.[15]

Today the King Stone still towers 2.60 m above the ground. A single menhir, it stands about 70 m away from the circle.

Rollright—stone witnesses from antiquity.

In his final report Robins confirms the hypothesis according to which the stone circles are energy-activating centres and states that Stone Age men who built the Rollright complex consciously made use of the energy produced.

That is a fantastic statement! It opens up dimensions which *measurably* oppose the theory of evolution. That doctrine will have it that all development, regardless of in which sphere, results from tiny steps, that every advance arrives via a sequence of stages and over thousands of generations. According to it nothing can simply and suddenly be 'there'.

If Late Stone Age men—to think in terms of the dusty old dogma—produced complexes like those at Rollright, Stonehenge and elsewhere and are assumed to have been at a comparatively low stage of evolution, their predecessors must have been even more simple-minded. That's what the religious dogma of evolution says. Therefore there was no one on earth from whom the builders could take over manuals of instruction, measuring apparatus and tables that would have

enabled them systematically to create the pulsations from stones proved by the latest physical and chemical techniques and deliberately release them. No one told our Stone Age men which stones emit the energy effect at a particular site in a particular order. Yet they must have known about the effect before they made use of it. The fact that their stones also communicate with the stars does not solve the puzzle, it only makes it more uncanny—especially in view of the world-wide distribution of such sites!

As I am assured that the collaboration of extraterrestrials is out of the question, something must have snapped in the sick brain of a Stone Age dictator, making him force his countrymen to install giant stones in playgrounds, and, since all dictators are imitated, other madmen emulated him and whipped their populations on to similar feats. That is roughly how stone circles originated over many many centuries in England, Scotland, Ireland and less numerously on the continent, or so people would have me believe. If this absurd

origin and development is accepted, the stone circle phenomenon would have remained confined to a comparatively small geographical area, a purely European stone plague. But that is not the case. Stone circles must have been an international fashion. They are found in India, Africa, Australia, Japan and the Pacific. Here are the addresses of the most important megalithic stone circles:[18]

The stone circle of Brahmagiri lies to the south of the Narmada and Godavari Rivers in south India.

The stone circle of Sillustani is located near Lake Titicaca in Peru.

The stone circle of Msoura is in north Morocco.

The stone circle of Nioro du Rip in the province of Casamance lies in Senegal, south of the River Senegal.

The biblical stone circle of Gilgal lies on the eastern city limits of Jericho. It was mentioned in the Bible. The prophet Joshua is supposed to have set up 12 stones in a circle in memory of the crossing of the Jordan. The stones are supposed to symbolise the twelve tribes of Israel.

The stone circle of Ain es Zerka is in east Jordan.

The stone circle of Ajun uns Rass is in the steppe plateau of the Nejd in Saudi Arabia.

The geographical location of the Australian stone circle south-west of the Emu desert: latitude 28° 58′ south, longitude 132° 00′ east.

There are several stone circles and stone wheels on the Japanese mainland and near Nonakado on the island of Hokkaido.

Professor Marcel Homet discovered the stone circle of Quebrada of Queneto[19] at sea level on the border between Peru and Ecuador.

There is a stone circle on Naue, one of the Tongareva Islands. In the literature it is specifically pointed out that the stone circle was neither a grave nor a tribal sanctuary comparable to a *marae*.[20]

The stone circles of Portela de Mogos and Boa Fe lie 16 km to the west of Evora in Portugal.[18]

For some reason or other the Late Stone Age men made building stone circles into a world-wide cult. *For some reason or other*—that is too nebulous, too vague, too inaccurate for me. I should dearly like to know *the* reason that led the pre-

Inca tribes in Peru to do the same as the aborigines in Australia, as the blacks in Senegal, the Indians, the Japanese and the isolated islanders in the Pacific. The stone circles all over the world do not all stem from the same period, but the builders were all simple journeymen who had not the faintest idea about radiation technique.

It is said that stones have always been sacred to mankind. Correct. *Certain* stones were worshipped and still are today. Gravestones and memorial stones, for example. Jacob, one of the three patriarchs of Israel, even—so Moses tells us—erected a memorial tablet to a dream experience:

> Jacob left Beer-sheba and went toward Haran. And he came to a certain (holy) place, and stayed there that night, because the sun had set. Taking one of the stones of the place, he put it under his head and lay down in the place to sleep.
>
> (Genesis 28.10 *et seq.*)

We do not have to read anything into this passage. It says in black and white that Jacob came to a holy place and put one of the stones, which presumably had collapsed, under his head. In other words, it was a special stone from a consecrated site on which Jacob slumbered and had this dream:

> And he dreamed that there was a ladder set up on the earth, and the top of it reached to heaven; and behold, the angels of God were ascending and descending on it! And behold, the Lord stood above it and said . . . 'and your descendants shall be like the dust of the earth and you shall spread abroad to the west and to the east and to the north and to the south; and by you and your descendants shall all the families of the world bless themselves'.
>
> (Genesis 28.12 *et seq.*)

The next verse says: 'For I will not leave you until I have done that of which I have spoken to you.'

What had the Lord promised? Simply that Jacob's descendants would spread all over the earth and the Lord would not leave Jacob. Whatever generative power we attribute to him, Jacob could scarcely have distributed sons, daughters

and grandchildren over every continent in one lifetime, so the Lord must have supported him actively, for the Lord did not make his promise for an indefinite future. He would not leave Jacob until his mission was accomplished. Jacob found the affair mysterious. He does not sense that he can speak to the Lord at 'this place':

> Then Jacob awoke from his sleep and said, 'Surely the Lord is in this place and I did not know it.' And he was afraid, and said:
>
> 'How awesome is this place! This is none other than the house of God, and this is the gate of heaven.' So Jacob rose early in the morning, and he took the stone which he had put under his head and set it up for a pillar and poured oil on the top of it.'
>
> (Genesis 28.16 *et seq.*)

The facts:

On his march Jacob came to a place with holy stones.

Jacob takes a stone and sleeps on it, without having any idea of the magic power of his 'pillow'.

Jacob has a vivid dream. Angels are climbing up and down the ladder leading to heaven.

The Lord makes Jacob a tremendous promise.

Was all that a dream or a real event actually experienced?

If it were only a dream, the Lord's promise would have been meaningless. Dreams are disconnected, stuff without substance.

So what if it was not a dream? If the stone on which Jacob rested developed a picture of the heavenly ladder in his brain? Had the heat of his body released pulsations in the stone?

Undoubtedly every stone in these holy places was a special stone with a special history. Did the stone have the property of strengthening currents in the brain? Was Jacob a particularly suitable medium? Could a privileged being communicate with human brains through the stone? Do certain stones work like 'transmitters' and receptive men as 'aerials', when they are coupled to other human brains?

Those seem to be purely speculative questions. It remains to be proved that they are not, that they are more than wild ideas winging in the blue.

Men did not get the idea of erecting stones and monuments spontaneously. They were often inspired by God (or gods). In the Book of Joshua, the Lord orders the erection of memorial stones at a certain place:

> And the men of Israel did as Joshua commanded, and took up twelve stones out of the midst of the Jordan, according to the number of the tribes of the people of Israel . . . and they carried them over with them to the place where they lodged, and laid them down there. And Joshua set up twelve stones in the midst of the Jordan, in the place where the priests bearing the ark of the covenant had stood; and they are there to this day.

These stones were not to be considered simply as memorials. They were obviously intended to tell a story down the ages:

> And Joshua wrote these words in the book of the law of God; and he took a great stone, and set it up there under the oak in the sanctuary of the Lord. And Joshua said to all the people, 'Behold, this stone shall be a witness against us; for it has heard all the words of the Lord which he spoke to us; therefore it shall be a witness against you, lest you deal falsely with your God.'
>
> (Joshua 24, 26 *et seq.*)

The stone had 'heard words'? Joshua makes it virtually an 'aural' witness. But what use is a dead stone as a dumb witness? Did Joshua know about this special ability to repeat the words it had heard at some time in the future? It is still to be shown whether we are on the track of something working like a tape.

In Asia Minor the goddess Cybele, the great earth mother, supplied her Greek countrymen with prophecies which she made with the help of a 'holy stone'. On the Syrian coast her collague Laodicaea compiled her news with the same assistance.[21] At Delphi Pythia worked through the omphalos in the middle of the temple, the semi-ovoid stone called the navel of the world, and made daily statements about past and future which she had learnt about through the stone.

Mohammed Ibn al-Chatib from Kufa tells us in his *Book of Idols* about ancient Arabic holy stones, miraculous stones, the most famous of which is set into the wall in the south-east corner of the Kaaba in Mecca at a height of one and a half metres. This is the mystical religious centre of the Islamic world, worshipped in an empty windowless room. Muhammad himself made the Kaaba the central point of his religion and the 'Black Stone' (Arabic: *Hajar al-aswad*) the goal of all Muslims' thoughts. All over the world 650 million Muslims daily prostrate themselves in prayer in the direction of this stone. Their prayers carry wishes and hopes over seas and mountains to the 'Black Stone', from which they expect some kind of return. At least once in a lifetime every Muslim must make a pilgrimage to Mecca and touch the stone, otherwise he will never share the bliss of paradise. For the faithful are 'recorded' by the stone when they touch it. No wonder then that millions of Muslims still touch and kiss the 'Black Stone' in its silver setting, as they have done for more than 1200 years.

What is there about the 'Black Stone'? What can it do, what effects can it produce? What is the unique property which the prophet recognised in it?

As legend claims that the 'Black Stone' fell from heaven, it was at once assumed that it was a meteorite, an aerolite or nickel body of extraterrestrial origin, which did not burn up completely on its passage through the atmosphere.

That is a totally unproved assumption, for there has been no chemical analysis of the 'Black Stone'. The Muhammadans do not allow non-believers into the Kaaba, so they certainly would not permit an investigation of their sanctuary. Perhaps it really is an ordinary meteorite, for its uninterrupted power of attraction since Muhammad (570–632) is inexplicable. Meteorites of all sizes fall daily on to the earth, including Arabic countries, yet no one has ever heard of them being sanctified. Perhaps it is a quite special stone which did not *fall*, but *came* from heaven. There is a very big difference between the two.

In his excellent picture book about the prehistoric stone circles of England and Ireland,[22] Aubrey Burl turns his attention to me: 'The von Däniken approach of making mysteries out of non-mysteries.' Arthur C. Clarke, first-rate SF

author, makes this generalisation in a magazine:[23] 'The world is full of real mysteries. I am irritated by the idiots who try to make mysteries out of things for which there is a perfectly simple explanation.'

There it is, this miserable trick of dismissing 'heretics' cursorily and frivolously. If we realistic dreamers are so mediocre, why does anyone at all accept us? Because we hurt with our persistent questions, because we are not prepared to swallow the illogicality of many current explanations, because we do not look on highly dubious dogmas as taboo, because we doubt them.

I read with pleasure a newspaper column 'Science 100 years ago' and sometimes catch myself thinking presumptuously, 'Good grief! Was that the ultimate conclusion of scientific knowledge?' I at once curb myself and think, that was the latest state of knowledge *at that time*. Time corrects errors and replaces old results by new more correct conclusions, which in turn will be polished up and superseded in a couple of years. That is a normal and honourable process.

I have to marvel at the sublime self-satisfaction of my critics. They possess the ultimate definitive knowledge about everything that really holds the world together. Their elitist arrogance, their naive state of mind is enviable. I share the aims of the curious who think ahead, who are not afraid of being able to prove *tomorrow* what is unthinkable *today*. 'We cannot renounce the combustion engine because the prophet Muhammad rode on a camel,' said Datuk Husein Onn, the Prime Minister of Malaysia.

The construction of transport problems of the megalithic complexes are dismissed as solved in many erudite tomes. Such problems can be solved in many ways. What worries me about the explanations put forward is this: people always proceed from the possibilities conceivable *today*, as if they could go back in their imagination, scientific imagination, of course, to former times. But no one was actually there. What is put on the table as a solution is still only one of many other possibilities. Those who have thought themselves back into the past always offer the same set of aids: sledges, ropes, rollers and inclined planes of tightly packed sand or clay. As all our conceptions of possible types of transport are firmly fixed on such aids, doubting them is looked on as sacrilege,

as blasphemy. I have a high opinion of our scientists, but I cannot believe in them. They are human and hence subject to error, as you are, as I am, as we all are. Even when they happen to sit on the throne of eminence, that does not make them gods.

This question is meant to shock. What if men, thousands of years ago, could liquefy stone to a pulp and harden it again on the building site, just as we do with concrete today, delivering it from the factory in big tankers? Excuse me, omniscient ones, it is only a question. I wrote it down without thinking, for I can already see it, torn out of its context, being quoted by my smart opponents! So I do *not* claim the megalith builders worked in this way.

No, I think that stones weighing tons were dragged centimetre by centimetre over hundreds of kilometres by ropes attached to the necks of Late Stone Age men. If belief makes us blessed, the great beyond is teeming with incorporated archaeologists. We shall not meet there, for I doubt their often utopian assumptions. From early times holy stones seem to have been associated with the 'gods'; at least they are associated with the firmament for they, like the stone circles, were aligned on the stars. Were the heavens under perpetual observation because the 'gods' had promised to return? In terms of a religious cult that would be a sensible motive for the tremendous expenditure of work on erecting the stones. However, it does not explain the astronomical knowledge, the choice of sites or the special materials. Or does it?

Nor does a religious cult explain the story of Genesis—although the 'Lord' had a hand in it—according to which Jacob set up his stone pillow after use and poured oil over it. Why did he anoint the stone? He performed a sacred ritual which pertained to the priests. What had Jacob in mind, since he knew that the oil would evaporate and burn up in the heat of the sun? Was it his thanks to the stone that 'spoke' to him? Undoubtedly Jacob was in a trancelike state when he raised his head from the stone. Was that also true of Pythia when she brooded over the omphalos? Did she owe her prophecies to this stone 'Navel of the World'? Ancient texts say that Pythia fell into her visionary trances by inhaling vapours which emerged from a fissure in the rock. In spite of indus-

trious searches in and around the Delphic temple no cracks giving off vapours have been discovered. Did Pythia communicate with the stone omphalos? Did she act as a medium to whom it gave ambiguous answers when questioned?

I am looking for indications that extraterrestrials influenced Stone Age men. According to the way of looking at things so far, megalithic complexes show no proof of anything at all. Anyone who blissfully believes this has only to read a single clever book about Stonehenge to know that extraterrestrials are not needed to solve the mystery. Everything is known. On the other hand, if we think just a little further than the 'assured doctrine' then the extraterrestrials, inopportune yet helpful in tricky situations, hold an outstanding position.

There are countless traditions which tell of promises by the 'gods' to return in the distant future after their stay on earth.* Hope of this return has survived among mankind. No one has so far tried to find out if a mathematical key to the date of the return is hidden in megalithic structures. More than 600 of the complexes examined by Professor Thom are laid out according to astronomical rules. So far only the 'gods' know why.

There should be no doubt that hard stone was ideally suited as a deposit for news of the extraterrestrials. It is plentiful, it survives the millennia, it made possible monumental structures which constantly attract attention. So my hypothesis is:

Thousands of years ago 'gods' explained to the inhabitants of earth *how* to lay out stone circles, what material to use, in what arrangement and where the stones had to be erected, so that the inserted messages could be deciphered in days to come.

The 'gods', who created us in their own image, placed traces of their intelligence in the descendants of the new species genetically manipulated by them. They made a mistake. We have understood nothing.

If Dr Vladimir Avinski is right in thinking that the magnitude of the five planets nearest the earth can be read from the Stonehenge complex, the extraterrestrials must have given

* *Signs of the Gods.*

a helping hand. There is no getting round it. If Late Stone Age men, as Louis Charpentier[24] and Robert Wernick[25] mention, erected important structures at the crosspoints of electric currents in the earth's interior, extraterrestrials must have given a helping hand, for they only become measurable with modern physical apparatuses. If it is true that trained priests or gifted mediums could communicate with pulsating stones, extraterrestrials gave a helping hand.

For some reason or other.

What reason?

3 Mind: The Fundamental Basis of All Matter

'We are wrong to ask why. What we really ought to ask is "Why not?"'

George Bernard Shaw

At question time in the Illinois Institute of Technology in Chicago, a student asked me, 'Do you really believe in your theory?'

'As I am convinced of it, I am precluded from believing in it. "Belief" is the prerogative of religions; it is emotional trust in an authority, in a doctrine. In this sense belief simply means that the secret of nature must be accepted as it is. I have to convince by facts, step by step, for I am not the leader of a sect and still less the founder of a religion.'

I am an indefatigable moonraker, yet time, evolution and research support me. What were bold hypotheses, tightrope acts without a net, when I began to write 14 years ago, have gradually been confirmed by scientific recognition. It is not always a bed of roses. Sometimes I have to invite my readers to a strenuous climbing party. Once we reach the summit the view becomes clearer and paths that are easier to negotiate lead through the plains of theory. No one should 'believe' that titanic courage goes unrewarded. Let us set out on a new road. Unfortunately I cannot help it if it is rather hard going.

On our climbing trip we shall take with us the statements of six leading scientists as tasty food for thought.

1. The molecular geneticist and Nobel Prize winner Professor Werner Arber says: [1]

> The results of molecular genetics . . . show us that spatially and temporally creation is infinite . . . Moreover creation is at work here and now, ubiquitously and continuously, in the independent choice of details during the accomplishment of specific vital processes.

2. Professor Joachim Illies of the Max Planck Institute of Limnology says: [2]

We are all infatuated with objectivity. We behave as if 'objective proof' were the ultimate in possible evidence, the highest of all attainable values, and we imagine we live in an objectively proven world which we then proudly call modern science. Some basic demythologisation must take place here so that we do not block access to our own selves and the truth behind all science.

3. Professor Max Thürkauf, a physicist from the University of Bale, says: [3]

Recently the natural sciences have been trying to reduce everything to physical and chemical processes. Nevertheless, paranormal phenomena are connected with what we call life or the spiritual world and that is superior to physical and chemical processes.

4. Professor Erwin Chargaff, the biochemist, says:[4]

A viscous avalanche of information pours into every gap in our consciousness. The mindless babble of idling machinery drowns every thought . . . Naturally there is always something more to do. As we know, small fleas have even smaller fleas, but how small can we chop up atoms and atomic nuclei? I have an uneasy feeling that if the Nobel Prize for Physics were abolished, no more elementary particles would be discovered.

5. The theoretical physicist Jean E. Charon says in his book *The Mind of Matter*: [5]

Scientists are seldom prepared to deal with 'metaphysical' questions, for the simple reason that the high priests of 'official' science forbid it. Now, as in the past, to occupy oneself with metaphysical questions is considered unscientific. Personally I find this attitude scandalous.

6. Professor A. E. Wilder-Smith, guest professor at various celebrated universities in different countries, says: [6]

Natural science exclusively studies objects that can be re-

searched within our material dimensions. If anyone suggests that God, who is a logos or ideas of a personal kind, stands behind the coding of life, the scientist generally rejects the suggestion immediately and decisively because it is outside his research possibilities . . . But what would we think of an astronomer who was unwilling to explain the orbits of the heavenly bodies with the help of gravitation, because he would not accept the idea of such a force on *philosophical* grounds? By its very nature we could not produce such a force or study it in a laboratory. Admittedly, we could put the effects of this force under the microscope, but not the *nature* of the force itself. Consequently the whole subject of gravitation is scientifically intolerable.

Let us now make an experiment in the darkened room of an ophthalmologist and direct an electron microscope at our eyes.

It penetrates the cornea, the iris and the retina. We slip through the lens, which is attached to a fine mesh of fibres, and perceive the optic nerve which looks like a tree with many branches when magnified several thousand times. A fascinating world is revealed. Small crystals, which look like the stone debris of a bizarre landscape, are attached to the nerve fibres. Our microscope brings out molecular chains, hundreds of atoms linked to one another. While looking at an atom, it suddenly gleams brightly; we see a world in perpetual motion, we see the atomic nucleus, around which even smaller particles rush at great speeds. They are protons, neutrons and electrons. Between atomic nucleus and particles a universe is revealed like that between the sun and the orbits of its planets.

Let us catch an electron. If we couple it to a measuring appliance, which slows down its velocity as if in a slow-motion film, we see that in one second our electron enlarges by 10^{23} and then contracts. In other words it pulsates. The figure 10^{23} is a 10 with 23 noughts! This world of constant movement and diffuse radiation is the mysterious dimension of all matter.

Our ovular experiment can also be carried out with a piece of human skin, a bit of wood or a stone. The journey begins

differently, but in the end we shall always find atoms and their subatomic particles. For in the last event, everything is energy, radiation and movement, as Albert Einstein postulated 75 years ago.

This unalterable eternal fact makes many scientists despair, but forces others to be modest.

Supposing we reduced (almost) everything to its component parts and molecules were turned into the smaller unit of the atom. If we then studied its behaviour and that of the subatomic particles in a gigantic accelerator that splits atoms and releases radiation, we should still be faced with the same result in the end. Behind the smallest unit there would be a new order, a new law, which seems to obey instructions unknown to us given by the guiding force which all philosophers call 'mind'.

The French mathematician and physicist Jean E. Charon proved that mind and matter are inextricably connected! Charon speaks the precise language of mathematics.[7] Colleagues who have not yet made use of his work to form a revolutionary new conception will have to take notice of it. There is no way round it, for Charon's way *also* points back to prehistory, which leads to the 'gods', I am glad to say. Charon's proof means a significant change.

Matter is material, mass, the substance of all life, everything that exists. Regardless of its consistency, matter can be reduced to atoms and elementary particles. All that is old hat. But where does matter come from? How does it, how did it, originate? How did everything begin? Those are the exciting questions.

In the beginning there was nothing, the infinite void—black body radiation, as physicists call it. This radiation was in a waiting state from time immemorial, before any beginning so to speak. We may ask what existed *before* this state, but we shall find no answer. It may be imparted to us in a different dimension—after death. But that is a solution dependent on belief. As we are trained to think in terms of four limiting dimensions—length, breadth, height and time—the concept of infinite time has no place. If we posit a creator before any beginning, the new, yet age-old, question crops up. Who created the creator? Presumably a physical *perpetuum mobile* will never be found, but the question behind the question is a philosophical *perpetuum mobile*.

Mathematics and physics are counterpoints to philosophy. Physical calculations and observations show that the first pair of particles-cum-matter were an electron* and a positron.† Negatively and positively charged, the particles hardly needed any energy to unite as a pair, to form the first matter.

The first electron pulsated, as it still does today, at the incredible rhythm of 10^{23} expansions and contractions per second, a movement that led to extremely high temperatures of some hundred million degrees. Once again the physicists called the electromagnetic radiations so released 'black body radiation'.

On the basis of known physical reciprocal action, the positron can link up with the neutron to form a proton—one of the two building blocks of the atomic nucleus. Then the electron combines with the proton and produces a hydrogen atom. Seventy-five per cent of the matter in the universe is hydrogen. As there would have been no hydrogen atom without the electron, it follows that the electron existed *before* hydrogen. The slogan 'In the beginning was hydrogen' is wrong. In the beginning was the electron. It was present at the origin of the first pair of particles and it asserts its unchangeable role during the penetration of all matter, including mind.

Jean E. Charon proved mathematically that the electron exhibits similar properties to a 'black hole'. We must go into that further, for we do not want to lose sight of the electron.

What is a black hole?

We must go a long way back. After the origin of the world, the so-called Big Bang, gas, carbon and cosmic dust swept through the universe. Particles met and whirled round in a kind of cloud until, owing to the constant rotation, they formed a ball which perpetually attracted more matter. The increasing density caused intense friction among the particles. Tremendous heat was engendered and as a result a glowing red star. The young star increased in density still more and finally shone like a sun. Light atomic nuclei fused to form heavier ones. In the burning melting-pot helium grew out of

* A negatively charged elementary particle.

† An elementary particle with the same mass and charge as the electron, but positive.

hydrogen, then carbon, oxygen and nitrogen. Finally increasingly heavy elements were formed, including iron.

During this smelting process energy was constantly produced and emitted, a process like that which has been taking place in the sun for milliards of years and during which, says the English astrophysicist John Taylor,[8] 'our sun pours out 4 million tons of its own mass every second, ten thousand times more than the amount of water that flows under Waterloo Bridge in the same time'.

Even a sun cannot go on expending forces so lavishly for milliards of years without damage. As soon as the lighter elements are exhausted, nuclear fusion (the construction of heavier atomic nuclei from lighter ones) comes to an end, because there is nothing left to fuse. The star inflates, explodes and becomes a big, new star, a supernova. During the explosion its brightness increases ten-million-fold. Stellar matter is sprayed into space, but in the last phase of extinction the majority of it falls back on to the star. This compresses it; it becomes smaller and owing to its small magnitude joins the group of white dwarfs. But such a white dwarf has a special characteristic. Its weight increases the speed of rotation around its own axis. In spite of the original mass preserved in the turbulence, its diameter shrinks to a few kilometres and the white dwarf becomes a pulsar, so called because it is supposed to emit brief electromagnetic signals with each rotation. Whether it actually does or not is unimportant; it does rotate and lose energy, which gradually slows down the rotation around its own axis. The top stops spinning.

The star is finished; it suffers a collapse. Its internal pressure can no longer withstand the gravitation of space. It collapses and not a ray of light is left to tell of its former existence. The astrophysicist Reinhard Breuer defines it as follows:[9]

> A black hole is what we call a star that has become so extremely heavy by contraction that no particle, not even light, can pass its surface. The contraction of a star that leads to the birth of a black hole happens in a flash—in fractions of a second—in what is called a gravitational collapse.

We owe our ability to ascertain the violent hour of birth of a black hole to the astronomer Kark Schwarzschild (1873–1916), who, as Director of the Astrophysical Observatory at Potsdam, made important discoveries about the movement of fixed stars. The limit (event horizon) to which a star must be compressed and from which space closes around it is defined by the Schwarzschild radius. Thus Schwarzschild confirmed what Einstein had calculated and what astronomers and astrophysicists have observed on countless occasions since then.

The black hole is a space inside space, rather like a bubble in water. Anything captured in the space of a black hole can never come out again. This sinister Moloch does not even allow light quanta to escape and is, therefore, invisible. Its existence is only betrayed by the curvature of our space which approaches the space of the black hole in the shape of a funnel. In this alien world, the physical laws prevailing are totally different from those in our environment.

Compared with the unfolding of time in our universe, time in a black hole runs in reverse.

In a black hole space has a *temporal* nature and time a *spatial* nature.

In our universe all processes unfold with increasing *entropy*. Entropy is the measure of heat content that is no longer available for mechanical work when energy is transformed. This is based on the second law of thermodynamics and means that the 'order' in every closed system always reaches a state of equilibrium of total disorder, what is known as maximum entropy. In simpler terms, if we pour a can of cold water into a bath full of hot water, the hot and cold water mix. We call this mixture a 'disordered state'.

In black hole space everything takes place the other way round—the processes unfold with *decreasing* entropy. The 'order' gets steadily higher.

In a black hole time unfolds cyclically, which means that all states keep on beginning anew. All information returns to its starting point. As nothing ever leaves the 'treasury', no information is lost. 'Order' is timeless. In this cycle information and order increase, like human experience which gains a little more information every day.

As early as 1963–4 the Nobel Prizewinner Richard Phillips

Feynman, Professor at the California Institute of Technology in Pasadena, showed that the space in an electron is not empty and that neutrinos and black body radiation are at work in it.

Jean E. Charon proved in addition that the electron behaves like a black hole, that it deforms the surrounding space in exactly the same way. Space curves and closes round the tiny electron like water round a bubble. The electron possesses all the properties of the black hole, plus one of its own. From its enclosed space it can connect with the enclosed spaces of other electrons.

Is that a contradiction, seeing that I have described the black hole as permanently cut off from surrounding space?

Black photons, light quanta with very short wavelengths and no mass, exchange their velocities with the black photons of other electrons. The fascinating and important thing from our point of view is that the processes in the electron continue with *decreasing* entropy, i.e. with increasing order. If electrons exchange black photons with each other—and it has been proved that they do—the state of information inside an electron increases steadily. The resultant conclusion is tremendous. The electron has been present since the creation of the universe. Whatever stages it may have gone through, it has not 'forgotten'; its information has increased all the time.

The electron has *always* been a stable particle. If we look on it as a carrier of memory, it has experienced everything since the very beginning. It permeated the universe and penetrated all kinds of matter. It is a component of all living beings, all plants, all stones and all brains. Its order increased. It amassed information and knowledge which it can exchange with particles of its own kind.

In connection with his description of black holes,[10] Rudolf Kippenhahn (1926), Professor of Astronomy and Astrophysics at Göttingen, wrote: 'Even the matter from which our bodies are built up has certainly bubbled about in the interior of a star at least once.'

We must understand and accept the full significance of that. The matter of the electron is immortal. Since it forgets nothing, took part and still takes part in past and present, knowledge and experience are also immortal. The electron preserves all the message of joy experienced and suffering

undergone. It permeated (and permeates) the earth, every stone, every plant . . . and each and every one of them are bearers of information. Bodies die and disintegrate; the electron lives on and hands on knowledge and information from the past to the future, as if in a relay race without beginning or end.

Jean E. Charon asserts:[5]

> This means that all matter that took part in the building of a living or thinking structure and during the relatively short lifetime of that structure possessed the qualities of its consciousness cannot simply return to its original diffuse minimal psyche after the death of that structure. The information and the 'consciousness' once acquired can never be lost. After the death of a complex organised structure no power in the world can ever effect a retrograde development of the elementary particle's consciousness.

Although in the past we have had no idea how to tackle many paranormal, parapsychological and metaphysical problems, now a cosmic system suddenly appears behind everything.

Albert Einstein stipulated that his body should be cremated and his brain donated to research. In 1978 the shameful news appeared in the press that his legacy to science was preserved in formaldehyde in a glass jar kept in a cardboard box in an experimental biological laboratory in Wichita, Kansas. At the time, when I read the terrible news, I thought automatically that a chance for humanity would be squandered once the cells died off. Now we know that the electrons of this superbrain whir through the universe, lodge in plants and stones and penetrate brains in which they resurrect the knowledge already stored there. Then electrons whose knowledge Einstein increased flash out and stimulate ideas in a new brain that its owner would not have had from his own experience.

The sudden illumination of a lightning idea happens to many of us. Suddenly up comes an image or a situation which we say we have experienced, although our memory says, I was never in that place, I never took part in that event. This mystery, too, is explained with the discovery that the know-

ledge of the electron is immortal. Electrons of the long since dead nest in our brains and unreel earlier memories.

The incomprehensible is now an actual event. The confusing, the mysterious, the inexplicable become intelligible. Time in the electron runs backwards, as it does in a black hole, therefore it can also announce events that lie in the future. Clairvoyance, precognition and prophecy become explicable. Nearly all West Europeans have read the name of Gérard Croiset, the clairvoyant who died recently. Police investigators from various countries used his services when they had to find the trail of a kidnapped child or the corpse of a murder victim. Croiset's proportion of successes was improbably high. He was the medium for something he himself could not explain. He did not know what went on in his brain at such moments. The power of electrons explains the phenomenon. A kidnapped child thinks and emits electrons charged with memories into the environment. These tiny omniscient particles are everywhere; there are no fences or walls which they cannot penetrate. If the brain of a suitably receptive medium managed to 'tap' even one of these electrons and allow it to penetrate his brain, it would find the trail that others sought in vain or know whether a victim was alive or dead. Others will be able to emulate Croiset in finding a hidden corpse.

It may be that a brain that makes contact with the knowledge of the electrons needs a specific talent, but I suspect that the ability lurks in each one of us.

What was science fiction material yesterday is explained now that the electron has been revealed as an information carrier. Then the question, 'Who are *we*?' arises. To put it crudely, like all matter, we are the allotted vehicles and parking places for the electron to collect and store information and experience, so that the timeless particle can hand them on from eternity to eternity.

In the mid-fifties a similarly astounding discovery shook the world. Francis C. Crick and J. D. Watson succeeded in unravelling the secret of heredity.

Every body contains the genetic code, the building plan for the construction of the whole body. This miracle of nature has long entered our life as the DNA double helix, although microbiologists still do not know why the DNA molecule

passes on information for the construction of a body, just as so far scientists do not know which law makes the female egg cell admit one specific seed among the 200 to 300 million spermatozoa which invade the vagina at ejaculation. The cause at work here is the mind behind matter, the consciousness in the electron. While female egg cells and male sperm are approaching each other, electrons exchange information through their black photons in fractions of a second. They are seeking carriers suitable for evolution.

Utopia? No longer. As Wernher von Braun said: 'In hindsight nothing looks so simple as a Utopia made into reality.'

The astronomer and physicist Arthur Eddington (1882–1944), who initiated research into the internal structure of stars, wrote that the matter of the world is the matter of the mind.

A distinction is made between dead and living matter, a distinction which should not really be made. Living or dead, it consists of atoms, protons and electrons.

Let us recall the investigations Dr Robins made into the stone circles at Rollright. The stones pulsated; an electromagnetic field was formed—the world of electrons! If anyone stood in the centre of the stone circle, the pulsation stopped. Were the electrons communicating with the person at the centre? Is it not conceivable in the light of recent research that a medium sensitised for the reception of the electron message could 'talk' to the stones? The stones oscillate, release electrons and transmit information—they comprehend mankind, the whole of nature and the vast universe. For the matter of the world is the matter of the mind.

There are primaeval stone sanctuaries on nearly all the islands in Melanesia and Polynesia. These religious sites are called *maraes*. The *maraes* have no characteristic architectural style. Sometimes, as on the island of Raiatea, the *marae* is a large rectangle of massive monoliths, then at Arahurahu on Tahiti it is a terrace-style temple and an orderly arrangement of monoliths on the island of Tubuai in the South Pacific. Before Christian proselytising, the *maraes* were 'the official places of meeting between Polynesians and the realities of another world'.[11] The rites that were celebrated in the *maraes* are not known, but the islanders told the first European visitors that they were very *tapu*, very holy places. *Tapu* means

'the strongly marked' as opposed to the normal. We have adopted our word 'taboo' from the Polynesian.

What was taboo about the *maraes*? What was strongly marked?

The South Sea islanders had a second concept that was sacred to them, *mana*, which means effective. Dictionaries say that *mana* is a word to describe a power or effect that is not physical and is in a certain sense supernatural. *Mana* is effective in men, or organic and inorganic nature, and is usually inherited. *Mana* can be concentrated in men, the divine king for example, or in objects. *Mana* also means the power that inspires terror and awe.

A *marae* was not only taboo, it also possessed considerable *mana*. Wilhelm Ziehr wrote:[12]

> *Mana* can also manifest itself at certain places, such as spooky clefts in a cliff, dark places on the beach or in the jungle. Such an impersonal *mana* is then embodied in the spirits and demons that haunt these holy places. By holding secret ceremonies, for example by using the *mana* of a cave in a coral reef in the New Hebrides (Port Olry), one can make oneself invisible and invulnerable. One overhanging cliff conceals so much *mana* that anyone who stands under it can change his sex. Strangely shaped stones are set up at special religious sites, for they, too, contain mysterious powers.

When highly regarded personalities died, such as a wise priest, an honoured chieftain or a brave hero, a mysterious *mana* possessed them even in death. Their skeletons were more taboo than those of ordinary men. Their graves were especially taboo compared to other graves, because there was more *mana* in them.

This strange spooky world which has had to be catalogued as an esoteric mystery until now has a plausible explanation. The *mana* that filled the experienced chieftain or the wise priest consisted of imperishable electrons. A priest had even more *mana* than other men and therefore radiated more wisdom and knowledge. What once seemed to be superstition turns out to be an advance presentiment of the effective forces behind matter. Much of the *mana* of the dead is not lost, for

electrons continue to work in the matter composing the body. May we not ask ourselves is this the reason why our feelings in a cemetery are different from those we have in a theatre or a restaurant? Is that why we are overcome by memories of the past and ideas about the future in a mortuary? Does a heightened exchange of electrons take place?

Did the primitive peoples still have immediate access to nature? Did they still sense the vibrations of the whirling electrons? Were they still able to 'talk' to plants, animals and objects (fetishes!)?

A Polynesian legend says that the god Maui came from the Tuamotu Islands to Raivavae to install a large *marae*. When it was finished, Maui took a stone from it to Tubuai, set up another *marae* and inserted his heavy present into the structure. The god must have been bitten by a craze for *marae* building, for immediately after finishing the one at Tubuai he again took a stone and flew to Rurutu, then to Rimatara and Rarotonga (the Cook Islands) and so on and so on. Everywhere he took with him a stone from the *marae* he had just completed. An absurd legend? Today we know why the god Maui acted as he did. With every stone, he implanted *mana* into the new structure. That is why Maui sought out certain special stones.

For stones vary greatly. Basalt has a different atomic structure from andesite, granite a different one from coral. It is true that ultimately everything terminates in the atomic world, the world of diffuse radiation and the electron, but the atomic lattices—we mentioned them in connection with our visit to Stonehenge—differ from each other in the rough state. There are types of stone which, with less applied energy, exchange their electrons more rapidly than others which can only release their electrons with difficulty.

Did the primitive peoples know this? Is that why our early forefathers brought a selection of special stones to special religious sites? Is that why bluestones brought from 400 km away had to be used at Stonehenge? An article by Dr Hans Biedermann supports this assumption.[14]

The archaeologists who specialise in the remains of Guatemala's prehistoric period have found several stone sculptures representing the heads or seated figures of ex-

tremely obese men. These statues, which they call 'fat boys', are characterised by a property that had remained unnoticed before. Certain parts of their bodies are magnetic, a discovery which we owe to the geographer Vincent H. Malmstrom (Dartmouth College, Hanover, New Hampshire, USA).

In the case of the stone heads, which are to some extent reminiscent of the later sculptures by the Olmeks on the Gulf of Mexico, the concentration zone of natural magnetism are near the temples; in the figures of obese men crouching or sitting they are in the umbilical region.

Stonemasons or sculptors must have been familiar with the phenomenon of magnetism around 2000 BC, for they sought out basalt blocks that clearly showed natural magnetism in places as raw material for their work.

That's it, I said. In magnetism electrostatic fields have a reciprocal action. Electrons are exchanged. Modern investigators used modern measuring apparatus to show that primaeval stones had a magnetic effect. What kind of apparatus the scholars of 4000 years ago used to determine magnetic radiation at a certain point in a rock is a question I should like some omniscient being to answer, please!

Research into a magnetic sense in human beings has just begun.[15]

In June 1979, at Barnard Castle, 31 boys and girls were blindfolded, put into a bus and driven to an unknown destination on a sunless day which precluded orientation. Longish objects, half of them containing bar magnets, the other half merely dummies of the same weight and appearance, were attached to their heads. When they reached their destination, the children, still blindfolded, were asked to indicate the direction in which they thought their starting point had been. The object of the experiment was to find out if the human capacity for orientation was influenced by magnetic fields.

The result was astounding and created a sensation in England—as the *New Scientist* reported in October 1980. For the test children who wore dummies on their heads could point out the direction easily, while those who wore magnets had no sense of direction.

After further experiments, Robert E. Baker, of Manchester University, was firmly convinced that human beings actually possess a magnetic sense which can be disturbed by magnets.

Although there is no doubt about the existence of a magnetic sense in various creatures, bees, doves, dolphins, birds of passage, etc., the biophysical mechanisms have so far remained a mystery to science. Last year, researchers at Princeton University in New Jersey, USA, demonstrated the permanent presence of magnetic material in the dissected heads and necks of doves.

The researchers, writing in *Science*, said it was not clear whether the magnetic structures of living beings were actually used as detectors of the earth's magnetic field and their perceptions then passed to the senses. 'At least six laboratories in different parts of the world are already engaged in investigating human magnetism,' the report concludes.

As soon as Jean E. Charon's epoch-making discovery is made use of in these researches, the circle closes. Magnetic fields are the operational territories of electrons. The original mind, the mind of God, knew that. He made his creatures and all matter receptive to the eternally active force of the electron. The mind behind the matter left nothing to chance during the milliards of years when the universe was coming into being—the creation was not a 'game'!

As Albert Einstein said, 'God does not play dice.'

Critics are particularly fond of dismissing my astronaut-gods theory with the deadly remark that the distances from other inhabited planets alone made the cooperation of extraterrestrials in the creation of life on our planet impossible. They say that spaceships could never reach the velocity close to the speed of light that alone would make the transportation of 'life' possible.

Without repeating what I have already written about this attitude in my book *Signs of the Gods*, a spaceflight by a technically superior intelligence (though still conceivable) is no longer necessary, according to the latest scientific findings, for the importation of the extraterrestrials' knowledge and experience into our planet and their effective action during the 'creation' of the earth. The atom, as the vehicle for electrons charged with all knowledge, existed *before* the creation of the earth. Through electrons the brains of our forefathers

could also have learned about the origin of the universe. Perhaps electrons were messengers bringing news about distant solar systems and alien beings.

George Bernard Shaw wrote that we were wrong to ask why and that we really ought to ask 'Why not?'

The masterly answer to this was given by Max Planck (1858–1947), whose radiation formula inscribed the law of black body or full radiation in the bible of physics. In 1918 he won the Nobel Prize for Physics for his quantum theory. Towards the end of his days Max Planck made this statement:

> As a physicist, in other words as a man who throughout his life has served the most rational of sciences, namely the investigation of matter, I am surely free of the suspicion of being taken for a fanatic. So I say this to you after my research into the atom, there is no matter as such! All matter originates and exists only through a force which sets the atomic particles oscillating and holds them together to form the minute solar system of the atom. But as there is neither an intelligent nor an infinite force in the whole universe, we must assume a conscious intelligent mind behind this force. This mind is the fundamental basis of all matter.

The electron.

4 Chasing Little Green Men (and Canards)

> 'A man should never be ashamed of admitting an error. By doing so, he shows that he is developing, that he is cleverer today than he was yesterday.'
>
> Jonathan Swift (1667–1745)

The American journalist Henry Gris, who speaks fluent Russian, interviewed the Soviet mathematician and astrophysicist Professor Sergei Petrovich Bozhich. At the beginning of August 1979 UPI (United Press International) sent the sensational conversation on the wire all round the world. I came across it on 20 August 1979 in the *Rand Daily Mail* when I happened to be staying in South Africa.[1] I read the article and held my breath. 'There is no doubt in my mind that a crippled alien spaceship is orbiting our earth, a tomb from outer space with a dead crew aboard.'

Had Professor Bozhich gone out of his mind? So when my clipping service sent me the *National Enquirer*[2] with the same interview, I wrote to friends on the editorial staff in Latana, Florida and asked for a transcript of the taped interview which they promptly sent me, translated into English.[3] I reproduce parts of it here word for word.

Gris: Professor Bozhich, your colleagues are very upset by the results of your researches. Will you tell us in the West something about them?
Bozhich: I have definitive astronomical data concerning various important discoveries.
Gris: And you're convinced of them?
Bozhich: Yes, I'm convinced. A crippled extraterrestrial spaceship from an alien solar system is orbiting our earth and it has been doing so since it fell into difficulties. It exploded. Two large and eight smaller parts of it are circling the earth. Our scientists have been following the two large parts by telescope for years. We assume that your people in the West have done the same. I think that a Russo-American project should be started to bring to earth

whatever remains of the alien spaceship and its inhabitants. It can be done and it must be done before the bits fall to earth and burn up in the atmosphere.

Gris heard the Russian Professor Bozhich express the astounding belief that aliens from another galaxy might still be alive in one or other of the two pieces hurtling through space. He also considered the possibility that the alien reconnaissance crew, while observing our planet, could no longer manoeuvre their craft owing to the breakdown and died as the victims of their mission. All the indications seemed to Bozhich to be urging us to seek contact with the aliens (or at least the objects) in order to advance our technology by decades.

On hearing this self-confident statement Gris made sure that the professor was really convinced of what he was saying. He received the reply that there were no terrestrial objects in space before October 1957, whereas the fragments in question had been observed for much longer. The possibility that they might have been fragments of a meteor that exploded had been eliminated, because the speed at which they move would either have made them plummet into the earth's atmosphere and burn up or hurled them into outer space. Gris's attempt to get a simpler more plausible explanation from Professor Bozhich failed. No, he said, all the other possibilities have been checked out and I stick by my statement. Originally the alien fragments were taken for meteorites, but then scientists asked themselves over and over again, what is it? What is staying in orbit and not leaving it? Not until Russian satellites were diverted from their courses by the unidentifiable objects were the relevant data fed into a computer. Then, with the objectivity possessed by computers, it emitted the astonishing conclusion (which shook him and his colleagues) that the ten parts were all united at one point on 18 December 1955. Consequently 'something' must have exploded in our orbit on 18 December 1955. Once they had acquired this information, they kept silent for years, calculating and recalculating before they made the sensational news public.

Henry Gris asked other Russian experts for their views of Professor Bozhich's remarks. Dr Vladimir Georgeivich Azhazha, commander of the first Russian submarine to sail

under the North Pole, who has published several scientific books, said:

> It is quite possible that the dead crew of an alien spaceship are still on board. If Russians and Americans put their heads together, we have the technical know-how to bring parts of the spaceship back to earth. We ought to do it and the sooner the better, if we hesitate it may soon be too late. The fragments will plummet to earth and burn up in the atmosphere. In my opinion there is absolutely no doubt that we are dealing with parts of an alien spaceship. We must not confuse these parts with meteors. And meteors don't have orbits!

The geophysicist Professor Alexei Vasilievich Zolotov, well known for his investigation of the Tungusku meteorite which exploded at about 7.17 hours on 30 June 1908 over the Siberian taiga, confirmed, 'There can be no doubt that we are dealing with the remains of what was once an alien spaceship. We have studied the case for years; now there is no time to lose!'

Are we losing the first real proof of an extraterrestrial technology through negligence?

Are the Russians on the right track, have they judged correctly?

Are the parts they have been observing for so long fragments of an extraterrestrial spaceship?

Why don't the Americans make a move to clear up the phenomenon? If there is anything in the most fantastic story of the century, why is it not constantly hitting the headlines in the press?

Would not this research be worth a scientific 'summit' that might justify that pretentiously overworked concept.

I wanted to know what there was in the 'sensation'.

Here is the story:

In October 1969 the American scientific periodical devoted to astronomy, *Icarus*, published a nine-page article: 'Terrestrial Satellites: Some Direct and Indirect Evidence'.[4] The author was the astronomer John P. Bagby, who works at the research centre of the Hughes Aircraft Company in Culver City, California.

For years Bagby has been observing the space around the earth, an important task, for as from the beginning of the sixties Russians and Americans were putting more and more satellites into orbit. The flight paths of these artificial heavenly bodies allow of no deviation from the paths calculated in advance. 'Wobbly' satellites must be prevented from colliding. That applies equally to the geostationary satellites which relay television programmes and telephone conversations round the globe and which, seen from the earth, apparently always 'stand' at the same point on the horizon, although they do move as well. No matter how accurately the orbits were calculated and although there were no technical problems, individual satellites did not stick to the precalculated path. Something was diverting them, altering their courses and causing not a few of them to burn up prematurely in the earth's atmosphere. Russians and Americans covered every point in space above us with their precision radar. What was the cause of the course alterations?

Even before the first Sputnik was sent up on 4 October 1957, it was known that natural 'micromondes' orbit the earth. Ten such *natural* satellites were registered: eight small and two larger fragments. John P. Bagby examined these micromondes, published tables, compiled over a lengthy period, with orbital data and fed them into a computer to ascertain whether the *natural* satellites were responsible for the course deviations of the *artificial satellites*. Bagby and his computer produced an amazing result. If the path of a heavenly body is known, as well as other physical influences such as solar winds, the earth's attraction and centrifugal force, the deviations from its path that the satellite will make in the future can be calculated in advance. (Using similar calculations it was possible to predict in 1979 where and when the remains of Skylab would fall to earth.)

Bagby explored every possibility. To avoid the artificial satellites having orbital collisions, he not only made the computer calculate ahead, but also ran it backwards. Where did the natural micromondes come from? That was his query. And how much longer would they orbit the earth?

Calculating the orbital data retrospectively showed that all ten parts were united at one point on 18 December 1955. There was no doubt. There was an explosion in a terrestrial

orbit on 18 December 1955. But in his *Icarus* article Bagby put forward the view that natural *fragments* were involved; there was no mention at all of an extraterrestrial spaceship. The Russians were the first to come up with that idea. Why?

The Russians keep tabs on all interesting scientific publications in the West, which often publishes its findings in a rather casual way. To be sure Professor Bozhich said that he had followed the two larger pieces by telescope, but it was a fact that John P. Bagby was the first man to write about the phenomenon. East and West both agree that there are fragments, but they disagree about what they are.

The great powers like to pull the wool over each other's eyes, but there are facts which cannot be concealed, not even explosions deep underground. If a technical heavenly body had been sent into orbit, there would have been even less chance of concealing it. That is what launched the speculation that the ten obscure fragments might be artificial.

The first launching of a terrestrial satellite took place on 4 October 1957, two years *after* the explosion of the mysterious object. After the publication of Bagby's article, the Russians also began to calculate and they came up with the same date for the explosion: 18 December 1955.

What gave them at first sight the extraordinary idea that this disturbance of the peace in space was caused by parts of an alien spaceship?

The wily Russians thought a little further than the Americans. They wanted to find out what path the original object had followed before the 18 December 1955. In order to do this, they first had to know the size of the separate parts, which would enable conclusions about the size of the object when it was whole. Radar and laser measurements gave the two larger fragments a diameter of some 27 m, whereas the eight smaller parts could only be estimated roughly. Our reliable friend the computer knew in a flash that before the 18 December 1955 the object must have been between 70 and 80 m in diameter.

The Russians went still further. If the object consisted of meteoric iron it would have logically had a different weight from a hollow sphere. According to their findings, the exploded body must have been hollow.

Who is right, the Russians or the Americans? Was the object artificial or natural?

I wrote to Western scientists, questioning them at length on the subject.

Professor Dr Harry O. Ruppe, Wernher von Braun's right-hand man for many years, now holder of the Chair for Space Travel Technology at Munich Technical University, answered as follows:[5]

Lehrstuhl für Raumfahrttechnik
Technische Universität München
Professor Dr Ing. Harry O.
Ruppe

Richard-Wagnerstr 18 III
8000 München 2
Telefon (0089) 2105 2578
Telex 5 22854 tumue

I know the *Icarus* article you mentioned. Retrospective orbital calculations are always a bit dubious. To that extent, the 'unity of the object' is to be taken with a grain of salt. Measurements of the 'original' are easily arrived at.

Naturally such an object could be extraterrestrial in theory; nevertheless we always try to hit upon a less 'exotic' explanation if humanly possible.

Jesco von Puttkamer, a NASA engineer, answered similarly, but in more detail.

NASA
National Aeronautics and Space Administration

Washington, DC
20546

Up to the present there is absolutely no proof that the earth has any natural satellites except the moon. The statements made by Bagby in the article in *Icarus* you mentioned have since had considerable doubt cast on them and Dr John O'Keefe of NASA's Goddard Space Flight Centre, one of the leading experts in this field, says categorically that Bagby's data are wrong. He held many meetings

with Bagby and convinced him that the orbital deviations he cited and which his hypothetical satellites are presumed to cause in artificial satellites do not correspond to reality. Since those days many intensive searches for other satellites have been undertaken. Without exception, they have been fruitless. Naturally we keep a very accurate log of all artificial satellites—more than 4500 at present—many of which are of 'unknown', though not of extraterrestrial, origin (fragments, USSR, etc.).

You ask why such objects must have a natural origin. Because logically that is the most obvious answer. We know that the solar system is full of them, so it is not unlikely that the earth has some, too. To date extraterrestrial spaceships only exist in our imagination and it would be completely baseless and meaningless to scientists to call these figments of the imagination real so long as there are simpler, more firmly based, more normal and more logical explanations.

So the bubble of the 'extraterrestrial' spaceship bursts and honestly leaves nothing behind. But this will not stop many people, including the credulous and professional liars, from dragging out new evidence which does not exist at all in reality.

Professor Frank Drake is the leading astronomer in the world. In Ithaca, New York, he is Director of the National Astronomy and Ionosphere Centre of Cornell University, which has the biggest radiotelescope in the world at Arecibo in Puerto Rico. Professor Drake wrote to me:[7]

National Astronomy and
Ionosphere Centre
Office of the Director,
Cornell University,
Space Sciences Building,
Ithaca, NY 14583
Telephone 607–256–3734
Telex 932454

Arecibo Observatory
Post Office Box 995
Arecibo, PR 00612
Telephone 809–878–2612
Telex 385–638

If these objects did indeed come from a single object, there is, of course, at present no clear-cut evidence con-

cerning the origins of the original object. This must await a direct examination. However a natural origin is obviously much the most reasonable and in fact is entirely consistent with the existing knowledge of the objects. Of particular importance is that the roughly estimated semi-major axis of the orbit places the objects just inside the Roche limit of the earth. This makes a consistent picture in which a natural object broke up due to the tidal forces when it passed within the Roche limit.* This is also consistent with the fact that the objects seem to have very similar orbits, suggesting that if a parent object broke apart, the mechanism of the break-up was very gentle, and not highly explosive. This fits a tidal break-up picture.

I have no information about measurements of the objects, sizes, present whereabouts or any attempts to study them in detail. I hope the above is helpful to you.

These three convincing self-assured answers seem to make the matter clear. But do they really?

It is a time-honoured principle of science to use the first available item of 'instant' knowledge to answer open upsetting questions before 'exotic' explanations (Ruppe) are aired. The letters quoted above are based on this principle. Without this basic principle of scientific logic there would be a danger of the forces and means available for research being dissipated. Problems might be tackled that only waste time and money in the end.

And yet an undiscovered bacillus seems to lurk in this attitude. The 'logically most obvious' (Puttkamer) only agrees with 'the existing knowledge' (Drake). 'Up to the present there is absolutely no proof' (Puttkamer)—that means an outright renunciation of constructive imagination (by which even NASA was originally spurred on to make its bold plans) and attractive speculations. When I had the privilege of a conversation with Wernher von Braun, he was ready to listen to such ideas. The most 'obvious' answer always comes *from the present-day viewpoint.* In order to call in question the extraordinarily conservative principle, may I quote the

* At the Roche limit the gravitation of the earth and the gravitation of the moon work against each other.

American scientist and diplomat James Brian Conant, who wrote in his book *Modern Science and Modern Man* (1952): 'The history of science proves beyond all doubt that really revolutionary and significant advances come from new theories, not the empyrean.'

Examples will clarify the errors that can creep in when only the 'most obvious' possibilities are considered.

A prospector, i.e. a man who looks for the locations of iron, copper and other metals in the ground, fell sick 40 years ago. He complained of attacks of vertigo, his eyes hurt, his hair dried out and a leaden tiredness overcame him more and more often. Using the most obvious answers in their bags, doctors first diagnosed a cold, then anaemia and finally an indefinable virus. The prospector was treated according to these diagnoses until he died a rather painful death.

What had been overlooked by accepting the 'most obvious' answer?

Without knowing it the prospector had been working for a long time in an area with an underground vein of uranium. Naturally uranium emits radiation. Nature, which has the radioactive element inherently, does not protect it with concrete walls and water chambers. Because the 'most obvious' precluded the suggestion of the decisive possibility—given such an occupation—the man was treated with powders for influenza and haemoglobin preparations against anaemia, instead of drugs to counter the damage caused by radiation. The 'most obvious' had been done.

Or:

For more than 25 years thousands of people have claimed that they have seen UFOs. These things to not fit into the most rational framework of present-day science, therefore they do not exist. The 'most obvious' phrase of dismissal is taken from psychology. The people are cranks, they suffer from hallucinations, wishful thinking or delusions. Heaven knows I am no UFO fan, but I do think that by using the 'most obvious' method the problem is not solved, but merely shunted into a siding.

Or:

There are traditions which give both broad and detailed accounts of 'gods' who came down to our planet from heaven. The ancient chroniclers name them by name and

describe their functions, relate their achievements, as well as giving accurate reports of their arrival and departure. But because 'no proof' of their 'actual existence' can be given in 'our present-day state of knowledge', the 'most obvious answer' is relegated to the credulous sphere of religions or given a pseudopsychological interpretation.

If constant reminders bear no fruit, it should be borne in mind that pioneering revolutionary discoveries are so often made by outsiders who—unencumbered by 'present-day knowledge'—break into exotic neglected fields and are successful there. These outsiders are not satisfied with the 'most obvious' answer. Uninhibitedly they ask questions beyond the 'most obvious' answer—utopian questions beyond the state of 'present-day knowledge'.

I discussed this problem for hours with scientists I knew. They said, what are we supposed to do? Should we chase every hairbrained story? Wouldn't our financiers—universities and the state—stop our funds pretty quickly? Given this weighing up of material benefits, science seems to me to be on the horns of a dilemma between the 'most obvious answer' and chance correct answers on an empirical basis. A fatal situation.

Although I'm imaginative, I'm not a crank. I understand the dilemma, I am not pleading that every farfetched idea should be examined, but there is a broad field between the 'most obvious' answer and the speculative *possible* answer. Before the trace of a possible answer is pursued, the probability of its being fruitful should thoroughly be checked, that does not cost money, only a little brain grease. Scholars should investigate most carefully to check if the *possible* answer has a chance in comparison with the 'most obvious' answer.

To put it in concrete terms, two divergent statements are in opposition to each other. In the West the most obvious answer is that the ten unidentified fragments are *natural* 'satellites'. The Russians say, 'We have carried out all kinds of research, we have calculated and recalculated . . . they are parts of an alien spaceship.'

It is not up to me to assess the quality of the standpoints of either side, but my normal common sense tells me that the scientific high-ups should get round the conference table! I

am against losing a chance that may have incredible results. I am all for the Russians' suggestion to put at least one of the objects under the microscope before it burns up for ever in the earth's atmosphere. Millions of dollars were spent on collecting a few samples of stones from the moon that no one talks about any more. But very close to us, among 4500 registered artificial satellites, ten unidentified fragments are orbiting, with no one in the West giving a damn about them, because they have been explained by the 'most obvious answer'.

I, too, incline to the view that the ten fragments are of natural origin, but they must have come from somewhere. And definitely not from the earth. The complete object which exploded on 18 December 1955 in the miraculously coincidental view of both East and West had made a very long voyage. Does not its mere presence bring up the question of the existence of extraterrestrial life again? Could not minibodies also be the bearers of alien distant forms of life.

Did 'Bombs' from Space Bring Life to Earth?

Die Welt, 11 January 1980

In November 1980 a number of well-known academicians met at the University of Maryland, USA, to discuss the question of whether life on earth originated through 'seeding' from space.[8] When I modestly put this possibility up for discussion in 1973, bucketfuls of scorn were poured on my thick head; now scientists are discussing it seriously. I'm delighted.

Definite proof of extraterrestrial life is still lacking. According to Professor Hans Elsässer, the fact that the question of the existence of cosmic forms of life has become a serious subject for research is connected not least with the view held by many scientists who think it crazy to assume that we are the only intelligent beings in the cosmos.

Speculation about extraterrestrial life is not all that new. Hermann Ludwig Ferdinand von Helmholtz (1821–94), physicist and physiologist, wrote, 'Who knows whether or not meteorites and comets rushing through the universe carry seeds to places where worlds have developed subsequently, that they give beings a future.' At the Maryland symposium in 1980, Sherwood Chang of the NASA Ames Research

1 Like their forefathers, the locals relieve themselves on the beach at Tarawa in palm huts on stilts in the sea and reached over swaying palm trunks.

2 Phosphate, the island's only wealth, is over-exploited. In the harbour of Tarawa it is loaded on to big freighters bound for Australia and New Zealand. But for how long?

3 On the beach at Tarawa—one of the 16 island paradises in the Pacific. But they go on strike, even in paradise!

4 All the material for the huts in the small settlements comes from the coconut palm. Open on all sides, they mostly consist of one room, the meeting place for the whole family.

5 Wherever we went in our little Datsun truck, the youthful islanders were our constant companions, cheerful, lively and always ready to help—so long as they could understand us.

6 Teeta, our dark angel, opens a coconut with a blow of his machete. The milk is thirst-quenching, the white meat is good to eat—healthy all-round nourishment.

7 Reverend Kamoriki's widow invited us to supper—a colourful meal of island delicacies.

8 Apart from some government and administration buildings, the Kamoriki's is one of the few stone houses on the island—small, but bursting with hospitality.

9 The *maneaba*, the community house, is the centre of every village. Here the old men do the talking. Young men speak when they are spoken to and women are excluded. They chatter away in their huts.

10 Like all the airports on the islands, the 'airport' on Abaiang is a clearing hacked out of the jungle; the landing strips are bumpy. Animals graze on them, 'tended' by sleepy herdsmen.

11 Two of several compass stones on the island of Arorae. Anchored deep in the ground, for untold ages they have been pointing to distant islands far across the sea.

12 The site under taboo on the island of North Tarawa, in which nothing grows, is marked out in a rectangle with small stones. The tops of the palms actually do turn away from the circle.

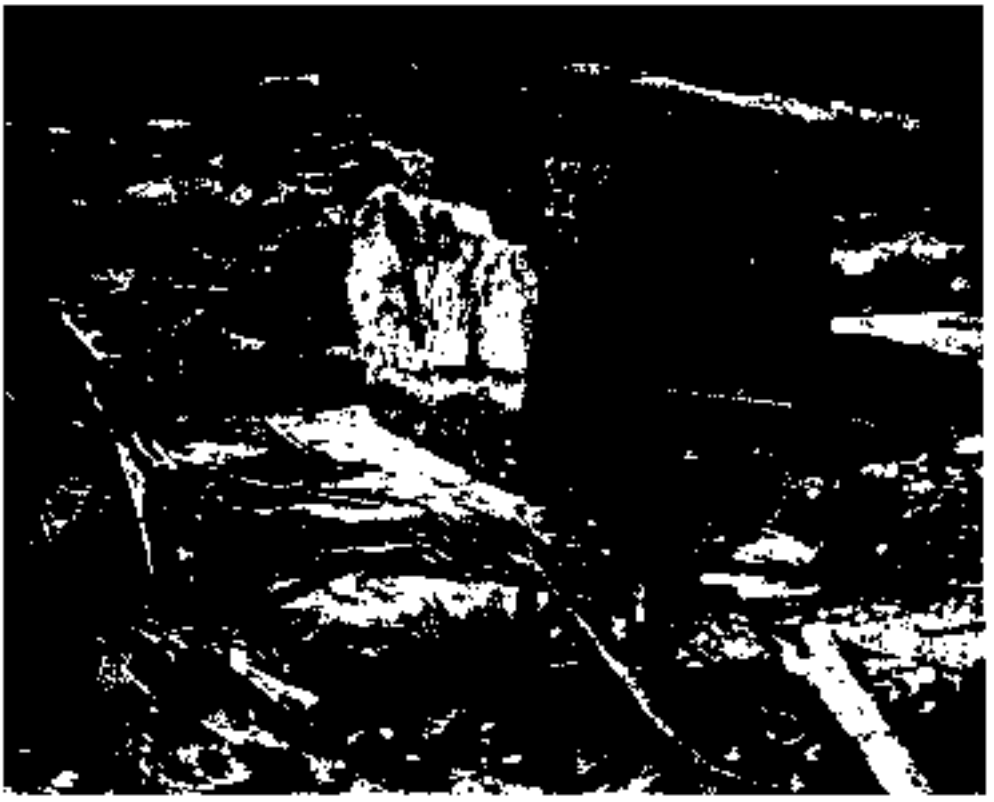
13 Stonehenge as we know it—the monumental trilithons.

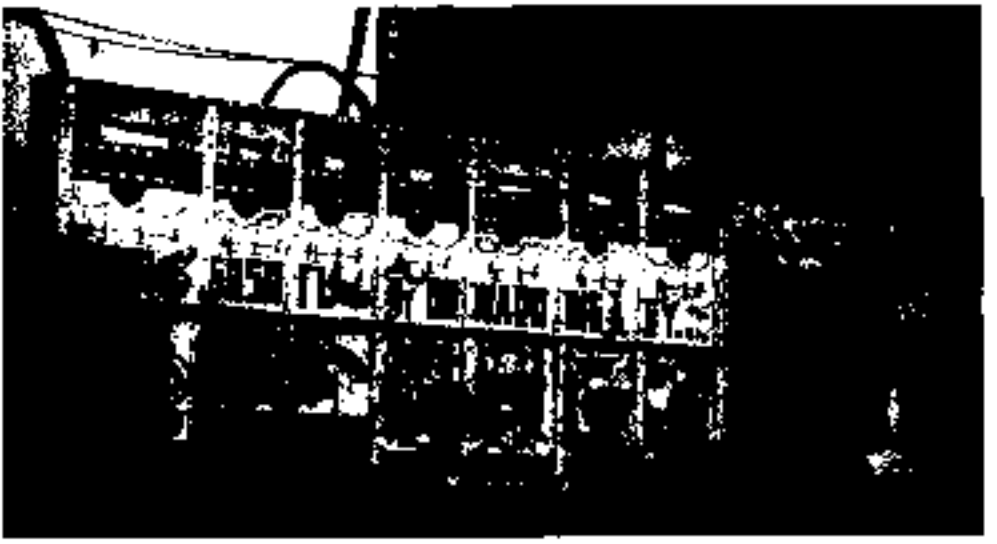
14 The investigations that led to brand-new discoveries began at Rollright. The lines with the 'speaking stones' run to left and right of the road.

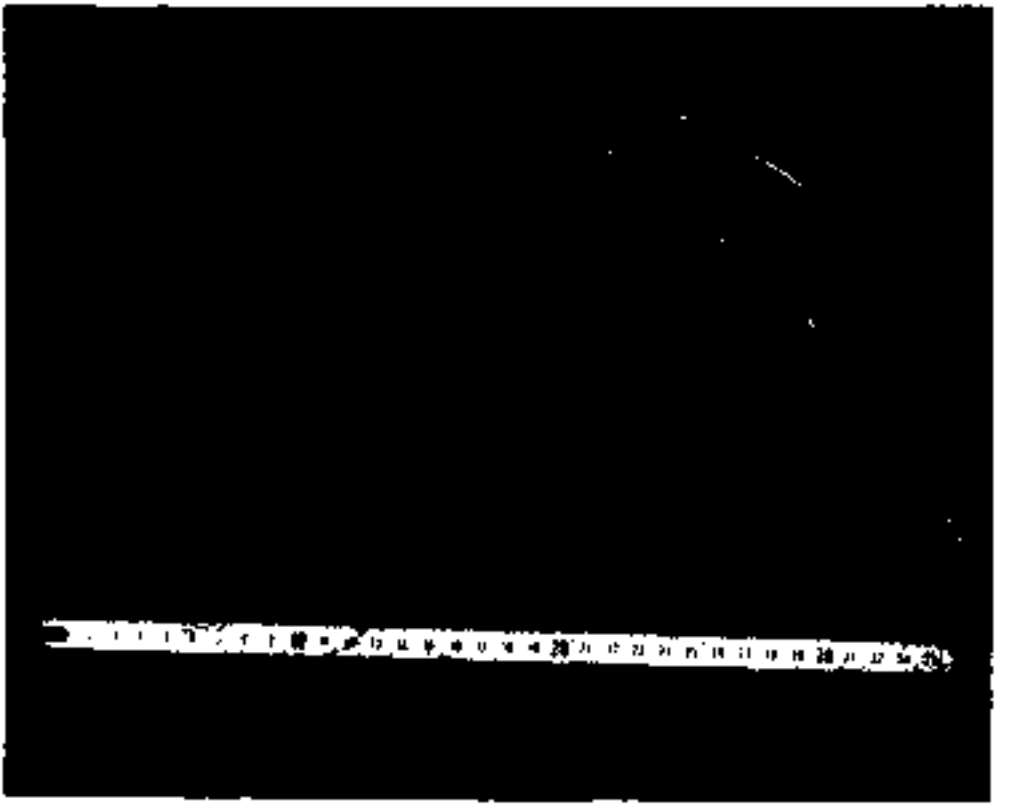
15 Although the millennia have taken their toll, the Rollright stones still have a remarkable message for us.

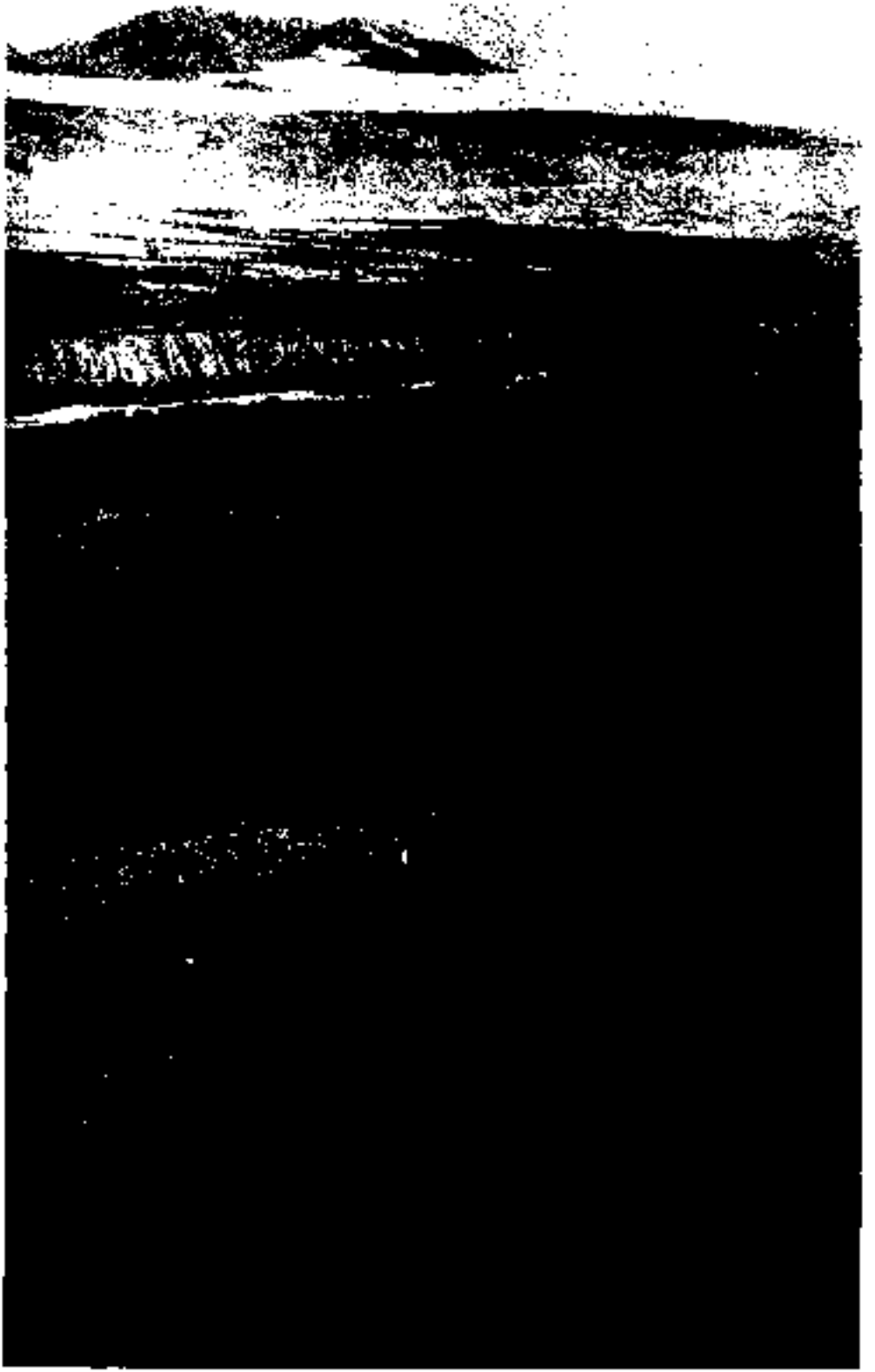
16 The *marae* of Arahurahu on Tahiti consists of several terraces made of small stones. Today the *marae* is still a holy place to the Polynesians.

17 The god Maui also took a monolith imbued with *'mana'* to the *marae* of Raiatea in French Polynesia.









18 Twice a week an Aero Peru plane lands in the dust clouds of Huanuco's primitive airport, at a height of 1800 m—twice too often for the tourists, for the only worthwhile sight is the marvellous mountain panorama.

19 Kotosh, the plundered archaeological site from pre-Inca days, on the edge of Huanuco, now green fields and a playground for Indian children, strictly but lovingly guarded by their mothers.

20 In the Indus valley camels, cows and of course sacred cows have the undisputed right of way. Unfortunately they have no idea of the highway code.

21 The Pakistanis paint their lorries and buses all colours of the rainbow to propitiate their 'St Christopher', the patron saint of the roads. As the passengers packed into the buses reach their destinations alive, the colourful vehicles seem to fulfil their purpose.

22 At a height of 2180 m you drive through the Baniha Tunnel. As soon as you emerge on the other side, you have this breathtaking view of the valley of Kashmir.

23 You drive through many small villages with a Tibetan character. Their streets are welcoming and clean, like their friendly inhabitants.

24 Streams which still serve as open sewers flow through the outskirts of Srinagar—nice to look at, nasty to smell.

25 Hundreds of houseboats are moored in the canals of Srinagar. It is called the 'Venice of the East' because of its numerous canals.

26 The church in which Jesus is supposed to be buried is called Rauzabal Khanyar. It is a place of pilgrimage for Christians, Moslems and Hindus.

27 I climbed down into the vault, which is normally forbidden ground, through a small latticed door.

28 Tradition has it that the sarcophagus containing the body of Jesus of Nazareth lies beneath this stone monument.

29 The ruined site of Parahaspur suggests massive destruction from the air.

30 Hera as in South America the dimensions and weight of the stone colossi do not seem to have caused the builders any transport or dressing problems.

31 The heavens open their sluices. The road to El Baul was soon under water, turning into a raging river.

32 'El Baul Monument No. 27.'

33 This strange monolith, known as the 'writing desk' in specialist literature, is located in Puma Punku.

34 The prehistoric master builders of Puma Punku were certainly familiar with the circle as a technical draughtsman's aid.

35 The mysterious band with many thousands of holes for which there is no explanation runs from somewhere to somewhere in the Pisco valley, Peru.

Institute, California, described how it may have happened. The earth was hostile to life, like other heavenly bodies, which had been analysed by space probes—bare as the moon, ice-bound like Jupiter, with a dusty crater landscape like Mars, with no atmosphere. But comets and asteroids hit the earth like 'bombs' and supplied the basis for every form of life with material rich in carbon. Sherwood Chang is convinced that the first life developed from these biological building blocks. The objection that space radiation and great heat would inevitably have destroyed the molecules is contradicted by Don E. Brownlee of Washington University who is convinced that the carbon-rich particles could withstand the long journey. With the help of their characteristic radio radiation Brownlee was able to find at least 50 chemical combinations as the basic material for the origin of life—of the kind meteorites and comet tails bring with them.

Professor Yeheskel Wolman of the Hebrew University of Jerusalem held the same view.[9] At a congress in the summer

Jerusalem Conference on the Origin of Life
Did Adam Come from Outer Space?
Die Welt, 25 June 1980

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of 1980, more than 100 scientists discussed the question, 'Did Adam come from space?' Although they agreed on the development from lower to higher forms of life, they disputed the question of how the step from the purely mineral abiotic world to the first low forms of life was taken.

Professor Wolman:

> We know from chemical analyses that the basic building blocks of life are chemical combinations with monster molecules. Each of these molecules consists of many hundred thousand or even millions of atoms. We call this chemical substance polymer. As soon as we know how and when the first polymers originated, we shall be closer to the origin of life . . . We suspect that the basic substance from which nature created the first polymers came from the cosmos, not from the surface of the earth.

In the discussion Professor Emanuel Gilav of the Weizmann Institute of Sciences admitted:

Like all research, our own began because we were curious. As soon as we know how the first living cells originated, it will become easier to fight cancer. For cancer is nothing more than a diseased multiplication of the cells.

All right. The existence of vital building blocks is discovered, but that does not bind us to admit that extraterrestrial life exists. Bits of space junk are revolving almost next door to the earth and we don't even take the trouble to find out whether this extraterrestrial stone—let's forget the parts of a wreck of the (Russian) alien spaceship—contains micro-organisms which might at least supply irrevocable proof of life in space!

Don't these dear scholars realise that here is a tangible chance of turning theory into fact? We have the technical know-how to investigate the ten mysterious fragments. Why don't we do it? In view of the incomparably greater problem, does it really matter whether the parts are of natural or artificial origin? Let us go in search of the origin of the first form of life. It is worth any amount of effort. In this sense the previous researches of East and West are of great importance. It is simply a question of switching to a new target. That should not be too difficult. If the UN (and its affiliated organisations) were not such an impotent rubberstamping set-up, it could summon members to a great communal effort: search for the first life in space!

We know that science is busily concerned with the question of how life reached our planet from the universe.

When the idea dawned on us that we are not the only intelligent beings in the universe, many comic and speculative ideas were put forward. What would the gentlemen from other stars look like? In the hope that the assumption of extraterrestrial life could be killed by ridicule, the 'little green men' hit the headlines. This kind of humour was of no avail, because more and more scholars were adopting the view that our civilisation was only one among millions or milliards of others.

In the meantime the men who according to my conviction only recently were literally reaching for the stars are backtracking . . . for example the Soviet astrophysicist Yosif Samuilovich Shlovski. He once told me in his Institute at

Universitetskiprospekt 13 in Moscow that he suspected planets with intelligent life within a radius of 100 light-years and he spoke of a cybernetically steered spaceship which could withstand a thousand-year journey undamaged. Today Shlovski describes the earth as a 'rare exception in the universe' and estimates the distance to the next civilisation at 10,000 light-years.

The Russian's statement[10] that our earth and its life form a 'rare exception in the universe' is not so new. It is as rancid as the postulate put forward in 1974 by Jacques Monod in his book *Chance and Necessity*. He claimed that we citizens of earth were the only intelligences in the universe—by chance! I offer some reflections which in my opinion do not emerge in the public discussion.

Scientists do not have to prove that life must have begun somehow, somewhere and at some time. We ourselves are proof of that. We are here!

It is a law of all life that it spreads and multiplies. That happens—yes, but since when and why?—around us every day and we contribute to it in a pleasurable way. That life perishes only to rise anew is an axiom that does not need proving.

Unintelligent life, the lowest forms of life, can only spread on its own planet, although owing to a physical event (earthquakes, volcanic eruptions, the destruction of a planet by the impact of a giant meteor) seeds of life, spores of the low unintelligent forms of life may be hurled into space.

Intelligent life has a tendency to spread. As soon as the technical prerequisites are available, it strives to leave its home planet to steer for new, distant destinations. Our own reconnaissances of the moon, Mars, Jupiter and Venus are examples of such beginnings.

Intelligent life does not have to spread necessarily and exclusively by manned spaceships. Intelligent extraterrestrials can also send out 'life bombs', light capsules, which they fire out of their solar system with rockets. Such capsules can contain micro-organisms, cells with the genetic code of their own species. By this process intelligent inhabitants of other planets could 'seed' an infinite number of solar systems, as was assumed at the Maryland symposium in 1980.

Many capsules reach no destination, roaming through the

cosmos for all eternity or burning up in a sun. This possibility of spreading life could already be an actual practice in our case. By the time the reader of this book holds it in his or her hand, the Jupiter probe launched in March 1972 will have already passed Saturn and left our solar system. If the probe had been equipped with a small container filled with microscopically small balls that were diffused by a radio signal, our 'life envoys', genes and micro-organisms, could be floating in all directions in the universe and—perhaps—reach a planet suitable for life, on which after millennia beings 'in our own image' would develop.

According to this scenario life following the original pattern can develop in various solar systems. The scientific view is that this development on other planets is beyond our ken.

Consequently the question, 'How great is the probability of the development of life on other planets?' is unanswerable. Once in the universe the life sent forth by us (or by other intelligent beings) continues to evolve according to the primaeval law. Life multiplies by snowballing. Ceaselessly. Irresistibly.

Taking all the criteria into consideration, we have, in my opinion, a choice between three possibilities.

First, life is infinitely complicated. Our existence was a unique piece of good luck—coincidence! (Monod.)

Secondly, life can have originated at different times in different places in different forms. This possibility is so minimal that it can happen at the most every 10,000 light-years (Shlovski).

Thirdly, life evolved *once*, somewhere, at some time, and spread by addition and multiplication. This assumption is assured by the evolutionary principle according to which all developed intelligent forms of life are similar (Däniken).

Possibilities one and two are not demonstrable at the present. Admittedly we exist, but we do not know for certain whether there are other intelligent living beings. Three is demonstrable. We exist and all intelligent life tends to spread and multiply. We—like nature—practise this.

Without the little green men!

Anything that lay in the earth for millennia must await an encounter with me till the day of judgement. It will not be forgotten, for my archives are marked with tags of different

Father Gustavo Le Paige, who is supposed to have found the skeletons of dead beings from other stars.

colours to remind me. Thus a sensational news item published in 1975 languished in the 'Unlikely' box.

Dead people from other stars in ancient graves:

> The Belgian priest Gustavo Le Paige is convinced that beings like men who came from other planets were buried on our earth many thousands of years ago. Le Paige lives in Chile as a missionary. For 20 years he has been carrying out archaeological research. The 72-year-old mission leader has excavated 5424 graves of men some of whom died more than a hundred thousand years ago, according to him. Padre Le Paige recently told a Chilean reporter: 'I

believe that extraterrestrial beings were buried in the graves. Some of the mummies I found had facial characteristics that we do not know on earth.'[11]

In a very ancient grave in the far north of Chile the priest found a wooden figure whose headgear resembled an astronaut's helmet on a cylindrical torso. In the holy man's opinion the funerary adjuncts came from an extraterrestrial. 'People wouldn't believe me if I were to say what else I found in the graves!'

To be honest I did not believe it myself, but as a matter of routine I picked up the phone and rang the magazine's office in Hamburg. They knew nothing more about the padre than what was in the article, moreover they had only had a telex from Chile that formed the basis for the story. Nor did questioning two journalists I knew in Santiago produce any result. They did not know the padre. The report went into the 'Unlikely' box.

It would still be there today if the Mexican paper *Vistazo*[12] had not published pictures of a skeleton and claimed that it was in the possession of Professor Ramón de Aguilar in Panama. A name at last!

Precisely at Christmas 1979 the reputable Brazilian magazine *Gente*[13] once again made us a present of the alien skeleton and mentioned Professor de Aguilar as the owner. The sympathetic face of a man in the prime of life, with an intelligent look, did not suggest a charlatan. And he is not, for I have met him since.

With some delay I received a report in the Spanish periodical *Mundo Desconocido*,[14] which again referred to the padre and his skeleton.

The tag on the 'Unlikely' box was flashing at me encouragingly.

I have been friendly with the editor of *Mundo Desconocido*, Andreas Faber-Kaiser, for years. I asked him for help. He knew nothing about the padre, but he could obtain Professor de Aguilar's address for me. Although further questions in Mexico and Brazil were fruitless, the professor answered by return. He would be glad to show me the skeleton and I could photograph it, too, from all sides.

But who and where was Padre Le Paige, the finder of the primaeval message?

The Swiss Embassy answered me on 4 March 1980 in a letter from the counsellor, V. Vuffray:[15]

Swiss Embassy
in Chile

Santiago, 4 March 1980
Calle J. Miguel de la Barra 536
Casilla 3875
Telephone 3 20 09

Ref: 642. O-VU/ke
Dear Mr von Däniken,

I confirm receipt of your letter of 23 February and beg to inform you that the Belgian Padre Gustavo Le Paige, who is known personally to the undersigned, is at present at Colegio San Ignacio, Calle Alonso Ovalle 1480 in Santiago. As he has been very ill in recent months and had to undergo protracted medical treatment, he will probably never be able to return to San Pedro de Atacama.

In this northern settlement at the foot of the Andes and in the vicinity of the saltpetre deserts, the above-mentioned built a museum which houses a wealth of skeletons that he found and excavated in the region as well as countless artefacts.

I very much hope that it will be possible to put you in touch with Padre Le Paige and I shall be glad to receive you during your stay in Chile.

Would that all embassies were so accommodating!

The same day I sent the Spanish version of all my books to the counsellor and asked him to transmit them to the sick padre with my best wishes for his recovery and announced my visit. Our ambassador Mr Casanova answered me on 7 May 1980:[16] 'I was going to take your Spanish books to the padre who is also known personally to me, when I was told that unfortunately he was dying and had been in a deep coma for several weeks.'

My South American travel programme, conceived to take in many destinations, planned a meeting with Padre Le Paige for the second week in August. Then on 6 June the following news[17] by express airmail hit me like a sledgehammer:

Dear Mr von Däniken,

Thank you for your letter of 27 May confirming your arrival in Santiago on 8 August.

I regret to inform you that Padre Le Paige died on 19 May. The Archaeological Museum which he founded in Atacama comes under the Universidad del Norte, Casilla 1280, Antofagasta.

I enclose three newspaper articles about Padre Le Paige.

Yours sincerely,
the Swiss Ambassador,
M. Casanova.

This time the account had languished too long under the heading 'Unlikely'. The obituary notices confirmed that the padre had the absolute confidence of the Indios. They emphasised that people had always been able to rely on the word of the man of God. But he had taken the secret of his funerary finds and hence the miracle of an extraterrestrial skeleton with him to the eternal hunting grounds.

I made a heartfelt wish that all the gods who looked on me with favour would preserve Professor de Aguilar's health.

At the end of August Professor de Aguilar received me in his well-stocked library with his family. I soon realised that he knew all about me from my books, while obviously I knew nothing about him. This charming bearded gentleman, whose bonhomie made me feel quite at home, laughed understandingly and took his five-page curriculum vitae from a drawer in his desk. De Aguilar graduated in medicine in Seville in 1953 and took a further degree in psychiatry in Madrid in 1960. As medical superintendent many doctorates were conferred on him *honoris causa*. I was in good hands and waited feverishly for the moment when I would set eyes on the first extraterrestrial skeleton.

The professor put me on the rack. Champagne was served; we toasted each other, his wife, his two daughters, talked about the humid heat in Panama, the stress of children at school, the wretched international political situation. I could not stand it any longer, interrupted the small talk, pulled newspapers and magazines out of my briefcase and asked rather impolitely, 'And what about the skeleton?'

Professor de Aguilar smiled, damped my ardour and explained that first I must hear the story of the find, a story that made me wonder if the learned man had lost his reason.

The year 1972. De Aguilar said that a skeleton very similar

Professor Ramón de Aguilar, Medical Superintendent in Panama.

to the one in his possession was found near Erendira in the Bay of California on the Mexican side of the border. The 1972 skeleton was taken to the world-famous Anthropological Museum in Mexico City, examined by reputable anthropologists and classified as 'not terrestrial'.

Then a strange thing happened. The skeleton vanished without a trace and the same scientists who shortly before had described the object as 'not terrestrial' changed their minds overnight. None of them stood by their former statements. The professor smirked, perhaps because such 'resoluteness' on the part of his colleagues was familiar to him.

Shortly after this incident, a farm labourer came to Ramón de Aguilar, bringing a 'skeleton' which he had found on the beach at San Carlos on the Pacific coast of Panama. The professor immediately discovered similarities with the Mexican find, which he knew well from numerous photos. Then, he recalled, a swarm of reporters arrived asking questions and frequently putting words into his mouth as he dis-

covered from what was printed the following day. Up to this point I understood him very well, for unfortunately I have fallen into such traps only too often. So far the story seemed rather dull, but I listened to it without interrupting in order to see the skeleton, for then the excitement would begin.

One afternoon three years ago three men dressed in black from head to foot rang his front-door bell, pushed the secretary who opened it to one side without a word and forced their way into his study. His colleagues were petrified with fear and de Aguilar admitted he did not feel too good, either.

The thought flashed through my mind of the three men in black,[18] those occult figures who haunt the international scene in sensational literature. They are linked with mysterious murders, are looked on as 'time travellers' who appear suddenly, carry out their terrible mission and disappear without a trace.

Even though the three men in black fitted perfectly into the professor's story, that distinguished scientist had never heard of those obscure figures before. Nevertheless, three men in the same clothes had been in his study in the flesh. Several eye-witnesses had followed their behaviour. Barely half an hour later the drama was over. The men in black withdrew as they had come without a word, as if the ground had swallowed them up.

'What did the men want? What were they looking for?' I asked.

'I don't know,' said de Aguilar. 'They did not ask for anything; they never said a word. The whole business was uncanny.'

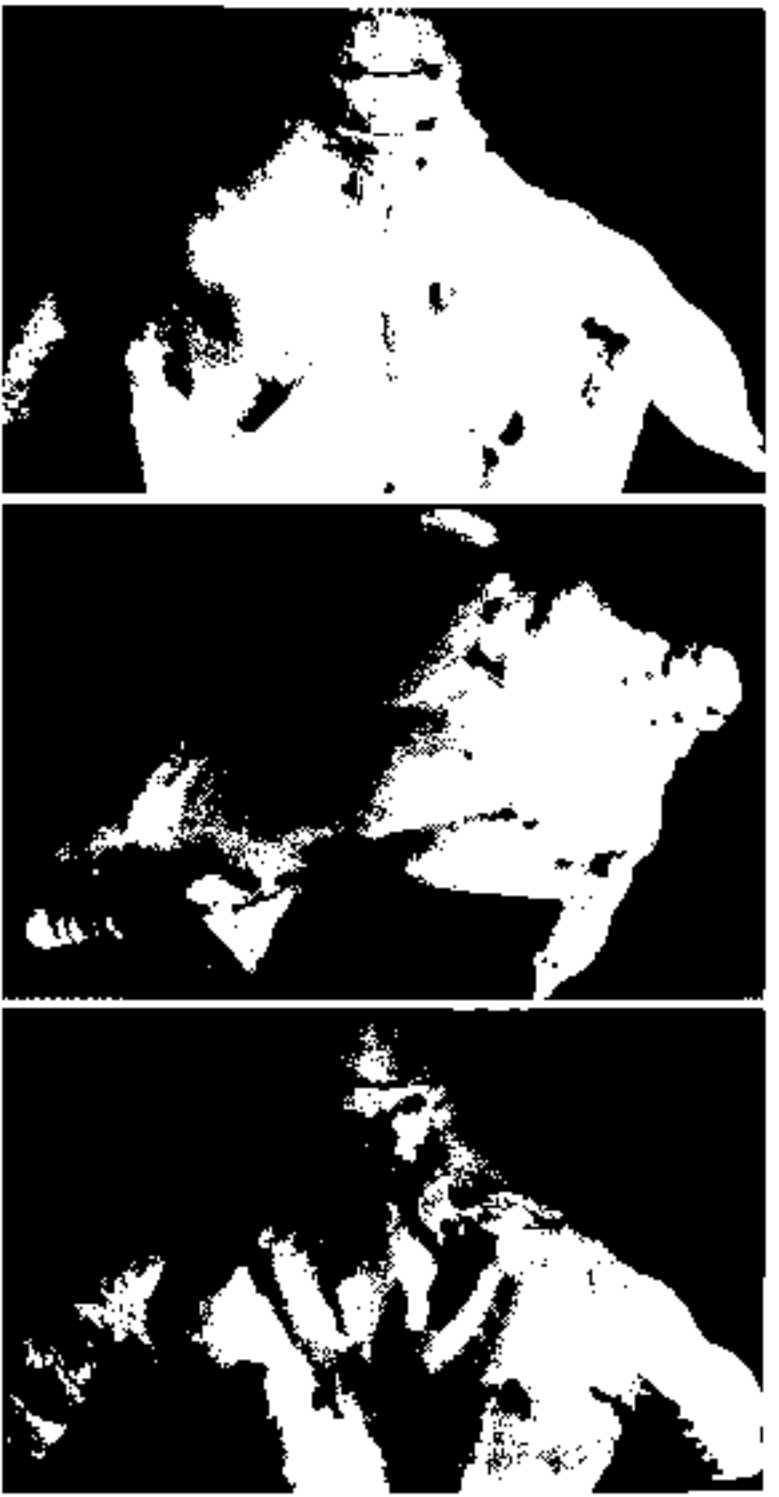
'Did they take the skeleton with them? Did they look for it?'

'No,' smiled the professor. 'Naturally I thought at first that that was what they had come for. I remembered the unexplained Mexican story, but no, the skeleton was not touched.'

'So you still have it?'

'I'm going to show it you now.'

A load of Cyclopean dimensions fell from my heart, after all one only has the chance of seeing an extraterrestrial skeleton once in a lifetime!



Professor de Aguilar placed a plexiglass box on the table. It was 15 cm long and 10 cm wide. He took the top off.

My eyes nearly fell out of my head. I was staring at a piece of bleached large-pored skin, a full 8 cm long! A rat's skeleton covered with skin, I thought, and picked it up with revulsion, looking at it from all sides. It weighed only a few grammes. It could have been sent by ordinary mail without paying excess postage.

In front on its 'chest', I noticed two holes on which the thing had presumably been spitted. Small stunted beginnings of arms were reminiscent of a foetus; I could see clearly that they had been sewn on to the white skin. The only remarkable feature I saw was the shape of two extremities on the back at the height of the 'shoulder blades', like Dracula's teeth or tired-looking nipples.

I kept giving the professor questioning and disappointed looks. He observed with obvious amusement how the nasty remains of what was probably a small mammal disgusted me.

'Is that the skeleton that hit the headlines?' I heard myself ask hoarsely. I knew that I was on the wrong track.

'That's it,' answered the professor.

'Then why do you think it's extraterrestrial?'

'Extraterrestrial?' Ramón de Aguilar shook his head vigorously. 'Extraterrestrial? *I* don't believe that it's extraterrestrial, nor have *I* ever claimed that it was!'

Who had sent this canard fluttering through the newspaper forest? The professor laughed, his wife and daughters laughed—liberating merriment that swept away my disappointment. The professor assured me that he had never said the 'skeleton' was of extraterrestrial origin. He had described the find as a curiosity, but had not linked that remark with any fantastic embellishment. Sensational journalists had added so much pepper to make 8 cm of white skin into a

The 'skeleton' turned out to be a piece of bleached, large-pored skin.

In front, 'on the chest', I noticed two holes on which the thing had presumably been spitted.

The only feature worthy of note was the strange extremities on the 'shoulder blades'. It was all a silly canard!

saleable newspaper canard that it was offered on editorial menus as roast of the day in distant continents.

It is best to laugh at yourself when you find you've been led up the garden path.

Postscript:

1. I unmasked the 'extraterrestrial skeleton' in Professor de Aguilar's possession as a pure newspaper canard.

2. When I photograph objects—for example, giants' footprints—which do not give an accurate impression of their size, I put a centimetre scale next to them. If it had been reported that the 'extraterrestrial skeleton' was only 8 cm long, the canard would have been unsaleable.

3. I doubt that Padre Le Paige's extraterrestrial relics will ever crop up again.

On 5 July 1980 I stumbled across a three-column article with the headline: 'Did the Incas Know the Secret of Making Diamonds?'

The Inca, nowadays the plural 's' is omitted, are old friends of mine and always good for a surprise. Why should they not have known about artificial diamonds, in addition to other inexplicable abilities? To my amazement I read:

> In the 500-year-old Inca temple of Cuca which lies in the inaccessible mountains north of Huanuco in Peru, a climbing expedition under the leadership of the South African ethnologist Dr Maath has made surprising finds on a site for sacrifices to the Sun God of this legendary South American people. After the Spaniard Lepico who reached the temple ruins of Cuca in 1925, Dr Maath from Cape Town became the second Inca scholar to penetrate to this 'holy masonry', as the correspondents of *La Cronica*, Lima, calls it. Apart from the fact that no one has yet worked out how the Inca transported giant blocks of a stone not found in this wild mountain region from the valleys to a height of nearly 5000 m to build a temple for the Sun God—they worship the sun—it is incredible that diamonds described as 'synthetic stones' by some experts should be found under the floor of a place of sacrifice.

According to the article the Inca ornamented their sacrificial chalices with valuable diamonds, stones cut from

natural finds that are priceless today. What was new was that the splendid sacrificial chalices were set in diamond-ornamented bases, two examples of which Dr Maath discovered; he removed seven stones to have them examined in Lima. I was not surprised to read that the diamond specialist and chemist Collins flew from America on hearing the news and travelled to Huanuco to meet the expedition. Later Collins said that he felt like an alchemist faced with the biggest discovery of his life. 'I have never seen such diamonds,' said Collins. 'During my long years as a specialist I have never hesitated so much in giving my judgement. I take them for half-diamonds, not synthetic stones, although they could be the latter. But it would be too incredible to claim that the Inca knew the secret of manufacturing synthetic/real diamonds. In any case they are genuine carbon diamonds. But there are characteristics which contradict a natural origin.'

Mr Collins did not want to elaborate, but Lima was awaiting specialists who intended to put the previous finds under their special microscopes. Their report concluded in this optimistic and speculative vein:

> Perhaps decipherment of the hieroglyphs also found at the temple of Cuca above the tomb of the 'Prince of the Sun Stone' will solve the puzzle and throw light on the mystery. Cuzeca, the eleventh-dynasty ruler, was reputed to worship the diamond in which he saw a sacred gift from the Sun God.

A report full of names, places and facts!

The contradictory epithet of 'synthetic/real diamonds' had obviously been inserted by a reporter. Diamonds are either 'synthetic' or 'real'. What irritated me, for I think I know Peru pretty well, I looked on as a gap in my education. Before then I had never heard of an Inca temple called Cuca. The mention of Cuzeca as the eleventh-dynasty ruler must have been a slip. The eleventh dynasty lasted from 1493 to 1525 and its ruler was called Huayna Capac.

But that counted for little in comparison with the exciting news—diamonds, possibly manufactured synthetically. Good heavens!

I phoned my friend Rico Mercurio, who had proved him-

self on the journey to the Kiribatis, and dragged him away from his diamonds, which he was just sorting or dressing.

'What's the score on synthetic diamonds? Do they exist? How are they made, what do they cost?' I asked and was told:

Antoine Laurent Lavoisier (1743–94), a member of the Academy of Sciences, was the founder of modern organic chemistry. In 1776 he proved that diamonds consist of carbon and are materially identical with the graphite frequently found in nature.

This piece of knowledge stimulated researchers at the end of the nineteenth and during the first half of the twentieth centuries to patient and expensive attempts to manufacture diamonds synthetically. They had no success. Not until 1954 did the Belt apparatus provide the technical requisites for manufacturing synthetic diamonds under high pressure at great heat. It worked like this. A test-tube is let into a high-pressure press that is under pressure of 35,000 atu at 1600°C. Under these extreme conditions graphite turns into diamond, with the help of a catalyst of nickel or the chemical element tantalum, a very expensive metal. Rico explained that the process was complicated and expensive and that the diamonds so produced could not compete with real ones.

That was just what I wanted to hear. The production of synthetic diamonds demanded a technical know-how which the Inca did not possess. If such stones were actually found in the temple of Cuca, we must posthumously ascribe an ultramodern technology to the Inca . . . or assume that they were gifts from representatives of a highly developed technological civilisation.

The article which so pleased me mentioned the newspaper *La Cronica*. An airmail letter to the editor was already on its way, promising payment in return for granting my request to send me the original report. In spite of the self-addressed envelope and the international reply coupons I enclosed there was no answer from Lima. I also asked the Gemmological Institute of Santa Monica near Los Angeles about the method of distinguishing natural stones from synthetic stones and imitations. Not a murmur.

During my lengthy stay in Peru in the summer of 1980 I had a few days free when I meant to take a mini-holiday.

One morning in Lima I took a battered old taxi to the building housing *La Cronica*, a popular paper with a big circulation, as I discovered. The sceptical friendship of the editor changed to extreme politeness when instead of flowers I gave him a signed copy of my book *According to the Evidence* in Spanish. I told him about the report of the Cuca diamond find in a German paper, which said that a reporter from *La Cronica* had supplied the information. The editor knew nothing about it and summoned a colleague. The conversation revealed that no one knew anything about Cuca, not to mention synthetic diamonds up there in the mountains.

'That's impossible!' I interrupted. 'We roast that sort of fat canard on April the first, not in the middle of the summer!'

Through the cloud of smoke in which his thick cigar enveloped him, the editor put a colleague at my disposal and said, 'During the last few years since I have been in charge that item has not been in the paper. Take a look in the archives for as long as you want!'

When I entered the long narrow room in the next-door building with shelves full of documents, files, annuals and boxes, my hope of finding anything in this classical South American disorder were dashed, but were pleasantly restored with the support of three kindly archivists. Much like my own archives, there was a dual classification, by date and by captions. In addition to *La Cronica* all the Lima newspapers had been taken apart and filed in orderly fashion.

I was faced with mountains which were assembled under the heading 'Archaeology'. With the assistance of the archivists and the volunteer we covered every report. There was nothing about Cuca. Did Cuca really exist? I began to wonder. It was not mentioned in the Peruvian lexicon, but given the thousands of Inca sites that did not necessarily mean anything.

From the hotel I phoned all the archaeologists and ethnologists I knew in Peru, including men who have devoted their lives to the Inca. None of them knew the Inca temple of Cuca in the mountains of Huanuco, but they all consoled and comforted me. There were so many Inca ruins in Peru that if they did not have something really out of the ordinary to offer they found no place in the literature.

A good boy scout since my childhood, I picked up some maps. According to the German newspaper article the Cuca temple was supposed to lie at a height of 5000 m, i.e. in the eternal ice and snow. All right. Huanuco is 3000 m lower down, north-west of it rises the Cordillera Blanca, the white cordillera, with Huascaran, 6768 m high. Within a radius of 100 km from Huanuco there are some five-thousand-metre mountains on which the Cuca temple might be located.

Aero Peru flies to the town of 50,000 inhabitants twice a week. The tourist guide,[20] which otherwise recommends a visit to every heap of stones, warns: 'The provincial capital on the upper Huallago, prized for its pleasant climate, has no worthwhile sights to offer the foreign tourist.' That is an understatement. Huanuco is dreary, yet I stayed at the Hotel Turistas for three days. State hotels with this name are found in all the larger towns such as Ica, Nazca and Cuzco.

In an old house near the hotel was a museum privately owned by a skinny nervous man with a goatee. The four rooms were crammed with all kinds of junk: stuffed animals, including a sheep with six feet, absurd archaeological figurines, skull-bones, etc. The bearded gentleman, who travelled around the countryside buying his trinkets, had never heard of Cuca.

The local Huanuco paper appears when needed, once a week if necessary. The editor and his wife had plenty of time to think seriously about my quest. No, they had no knowledge of Cuca, a temple or a diamond find. There were no archaeologists around, no excavations had been made for a long time.

Was I on a wild goose chase?

Toward evening I sat on a green bench in the marketplace and stared dully at the colourful crowd. Schoolgirls and schoolboys of all ages, with books and satchels under their arms, were running home. They were uniformly dressed, the girls in white blouses and dark-grey jackets, the boys in dark-grey trousers and white shirts. Three young girls stopped in front of me. They asked: 'Where do you come from?'

We were conversing. More schoolchildren came up, alert brown faces with hair as black as boot-polish. They asked, I answered. They asked me to sing the Swiss National Anthem. I promised I would if they would sing one of their folksongs

first. The song they spontaneously broke into is called *El Condor Pasa*. The song or rather my rather flat version of our national anthem attracted more curious children. For a moment I thought I had become a good missionary. I suddenly popped a question into the general discussion.

'Does any of you know the Inca temple in Cuca? It must lie somewhere here in the mountains . . .'

The children looked at me blankly and whispered to each other. None of them had ever heard of Cuca.

I asked them to ask their parents that evening and their teachers the next day. I would wait for them at the same time in the same place and if any one of them could tell me where Cuca was he or she would get ten American dollars.

To make a pretence of work on the next day of my holidays, I drove to the ruins of Kotosh on the town limits of Huanuco. I knew from the relevant literature that Kotosh is considered to be a pre-Inca settlement, about whose builders absolutely nothing is known. The little site on a hill is not a place about which one can say anything much. The pre-Inca builders could not handle monoliths or dress great blocks. They had not yet been 'kissed awake' by technology. On this particular day I was the only visitor. Warned by the tourist guide, others did not even go to Huanuco, let alone to Kotosh. And they were right.

My late afternoon rendezvous with the children gave me no information. Neither parents nor teachers had ever heard of Cuca. I was advised to visit other Inca temples, but I was only looking for Cuca.

The sensational article in the serious German paper lacked any foundation. If it appeared on 1 April, I would have laughed about it, as I did at the report in *Sterne und Weltraum* for April 1980,[21] scientifically presented under the title 'Archaeology at La Silla' and supposedly coming from Hungarian sources. With three academically sterile photos, the reader was referred to a 2400 m high mountain on the edge of the Atacama desert north of Santiago de Chile. Indian settlements from the pre-Columbian period were to be found there. Stone drawings showed a ball with a ring like Saturn's. The text read:

Should it turn out that the two drawings are more than a

few centuries old, perhaps even older than the European technical civilisation, the writings of Erich von Däniken, who has done a great deal of research in South America, will have to be discussed anew.

The source quoted was: 'D. Niken et al., Ver. Arch. Ung. 11, 222 (1979).' Can you imagine?

Jokes are allowed on 1 April. On all the other days of the year readers should not be fobbed off with apparently serious, but in fact purely sensational, articles. I have unearthed three cases here. I had been on the wrong track, but I returned home a wiser man.

5 In the Promised Land?

'Belief is not the beginning but the end of all knowledge'

Johann Wolfgang von Goethe

I knew India and Pakistan from visits that were only too brief. From the literature I knew about the prehistoric city of Mohenjo Daro in Pakistan and the ruined temples and pyramids in the Indian highlands. But I had never been there long enough to get out into the country. My previous visits were confined to cities which were easily and comfortably reached by air. Perhaps I never would have gone into the countryside had not several reasons for doing so cropped up simultaneously. I heard about speculations that the tomb of Jesus was in India. A startling piece of news. Then my publisher Ajitt Dutt wrote to me from Calcutta that my long-planned visit was now due and when I came would I please bring him a portable typewriter which he could not get over there.

Often in my life chance and luck have been the deciding factors which made me take a particular course. The letter from my Indian publisher was still unanswered when the post brought a letter from Tehran. My correspondent of many years Dr Kamil Botosha wrote that he had just returned from a desert trip which had taken him 80 km into the west of Persia, to the town of Kermanshah. There he had seen hundreds of cave and rock drawings which reminded him of flying beings and astronaut-like figures such as I had presented in my books.* The caves are only known to the locals and are virgin territory, archaeologically speaking. Dr Botosha recommended me to make the journey in a cross-country vehicle, unless I was keen on a long camel ride.

I reflected. The ruins of Mohenjo Daro are in Pakistan; the caves recommended by Dr Botosha beckoned me in the west of Iran, 150 km as the crow flies from the Iraqi border. On a globe every location looks neat and close to the next one, but there are 2500 km as the crow flies between the two

* *In Search of Ancient Gods.*

destinations. Brooding over the maps I discovered a chain of archaeological points of burning interest to me that lay precisely on the stretch between Pakistan and the Iraqi border. I noted the following down:

Tepe Yahya lies in the Soghum valley in southern Iran. Six thousand years ago the city is supposed to have been a centre of the Elamite kingdom. It played its part in history from the third century BC. The oldest written tablets, older than those of the Sumerians, were found at Tepe Yahya. In 1971 a joint American–Iranian excavation team decided that the place was already a trading centre around 4000 BC. They had convincing reasons. The written tablets proved to be receipts for the import and export of goods. Several hundred seals, as well as potsherds with mysterious motifs, were taken from the hill of ruins. There was no doubt that Tepe Yahya was worth a journey.

The old Sassanid town of Ardashir Khurra is located barely 100 km south of the present-day town of Shiraz in the plain of Firuzabad. I knew of this circular town with a diameter of 2.16 km from descriptions. Ardashir Papak, the builder from the Sassanid house, had the city divided into four equal sectors by a road forming a cross and considered it an image of the cosmos. In the centre stood a 30 m high tower without doors or steps. Archaeologists puzzle about the purpose of this peculiar structure. This round edifice had always fascinated me, all the more because I know that the Parthians, forerunners of the Sassanids, knew and used electricity. I have already written about a Parthian electric battery which is in the Baghdad Museum.*

The tomb of Kashmir, the ruins of Mohenjo Daro, the ancient city of Tepe Yahya, the Sassanid Ardashir Khurra, the caves of Kermanshah formed a line which could be covered in one journey. I had to go, but how?

Far more luggage than I usually take was needed for the long journey conceived on a surprise basis. In India and Pakistan, road conditions, with a few pleasant exceptions in the big cities, are at least as bad as in South and Central American countries. Outside the big cities—full of gigantic blocks teeming with humanity—one cannot get anywhere in

* *Chariots of the Gods?*

an old bone-shaker. A cross-country vehicle is indispensable, one of the kind you are never able to rent.

If I travelled from Switzerland in my own car, the round trip would take more than four months. Taking into account local stops and possible political unrest I could count on half a year which had no place in my calendar. How could I reduce this period to a more reasonable one? After much deliberation, there was only one solution. I would have to buy a Range Rover, send it on ahead by ship or air, start driving from the landing place and return to Switzerland on four wheels following the line between my various destinations.

Buying the Range Rover was a matter of a telephone call. Two weeks later it stood outside my front door, in its imposing size and massiveness. It is faster than a jeep and has four-wheel drive, and a differential gear. In addition it is roomy and comfortable. I shut myself up in my den with the technical handbook. Soon I discovered many Achilles' heels when it came to mountain and desert journeys. What to do if the petrol pump failed? Would I find a spare pump in a country with an area of 3,046,000 sq km and more than 500 million inhabitants? Was the normal battery charge enough? Could the bearings be protected against fine desert sand? What about the spark coil, the oil filter, the V-belt, the inner tubes? A guardian angel made me do something that friends mocked me for. I took two of everything with me, not to mention a winch which could haul the expensive vehicle out of mud and slime if necessary. I do not know what we would have done without the winch. Perhaps I should have done my critics the favour of vanishing without a trace.

In the century of tourism everyone knows that a passport is needed for travel abroad. It is not so well known that an international passport, a *carnet de passage*, must accompany a car. On payment of a considerable deposit, you are issued with this document. The deposit is supposed to prevent the car being flogged *en route*. In accordance with the international agreement of 8 June 1961 the Chamber of Commerce of the home country issues a '*carnet* for the temporary import of professional equipment'. I was yet to learn that international agreements are not worth the paper they are written on.

Before our Range Rover was loaded on to an Air France plane bound for Karachi at Orly Airport near Paris, we had

We said goodbye to our Range Rover at Orly Airport near Paris. See you again in Asia!

to empty the petrol tank, let half the air out of the tyres and disconnect the batteries. I asked the freight manager to contact the Air France office in Karachi and ask them to store the Range Rover in the shade on arrival so that our first-aid medicines would not be spoiled in the steaming heat.

Stowed in a container, we saw our fully packed vehicle disappear over a ramp into the cargo hold of the aircraft.

See you again in Asia!

16 January. We landed in Karachi shortly before midnight in a Lufthansa DC 10 . . . into a hothouse of clammy humid air.

We formed a queue in front of half a hundred white-clad customs men. It took a long time to get our passports stamped. We reached our hotel about three o'clock. The next day we would fetch the Range Rover.

17 January. Air France sent Mr Lakmiehr, a lanky Pakistani, to the hotel to help us with the customs. Why? We had a *carnet de passages*. At once he asked for Form A. I didn't have it, hadn't heard of it and showed him the *carnet*.

Mr Lakmiehr said wearily that it meant nothing and that besides we ought to have 'declared' the car last night. I informed him that the car had not flown with me and my secretary, Willi Dünnenberger, but had arrived days before on a cargo flight. The Pakistani thought our omission was a bad business. He drove us to the airport customs. There he deposited a letter in my name which read roughly as follows:

> Most honoured and venerable Mr Customs Inspector!
> I, Erich von Däniken, a Swiss subject with passport XY, arrived here last night and omitted to declare my car immediately on arrival. I sincerely regret this and beg you in your immeasurable generosity to overlook my fault and issue me with Form A.

After three hours I got Form A and filled it in in 30 seconds. Mr Lakmiehr took us into an office in which Form A was stamped after a lengthy delay. My Pakistani signalled us to follow him into the next office. There the first stamp was validated by a second. The 'offices' are open sheds. Weary fans turn under the ceiling. There is never more than one chair which is always occupied by an official. Cats are busy hunting mice, and sometimes rats as well. Waving Form A like a proof of victory, Mr Lakmiehr made for a building at the other end of the airport. Why didn't we take a taxi? Our helper silently pointed to the distant house burning in the sun. I was fed up to the teeth. And I did not hide my feelings. The man behind the desk smiled! Making extravagant excuses, he had a chair brought, looked at my passport, asked for a signature and handed me the car keys. Well, well. I was happy because I thought I was nearing the goal.

Mr Lakmiehr started a new hike. 'Where to?' I asked and was told that the car was still in the customs area and now it would need a customs agent to release it. He found him at the end of the diagonal right across the airport. His brown face lit up in a smile and assured us that he would take the matter in hand, but that it was too late to do anything today. We drove 25 km back to the hotel, cursing.

18 January. We were at the airport at nine o'clock sharp.

Mr Lakmiehr flourished a bundle of forms and said he had been working on them half the night. I cut into this self-

praise. 'Where is my car?' He asked us to follow him to an enormous shed. Even from a distance I could see the inevitable endless queue. Stubbornly I marched straight past it and went to the first man at the desk. 'Excuse me, I have come a very long way and must continue my journey. All the formalities have been complied with. Here is Form A, here is the *carnet*.'

The man in white grinned at me. '*Carnets* are not dispatched at the airport, only at road customs posts or in the port. Normally cars do not come by air!'

If I had not already been perspiring like a shower from all pores, I would have broken out in sweat.

An angry silent Mr Lakmiehr, Willi and I drove for one and a half hours through Karachi to the harbour and there entered the customs house, a gigantic hall with a hundred officials at a hundred desks. Below the ceiling 41 useless crippled fans—I had time to count them—were humming. No one there had ever heard of the internationally valid *carnet de passages*. With the courage born of desperation I shouted as loud as I could above the din: 'Is anyone here responsible for a *carnet de passages*?' The effect was tremendous. Suddenly there was total silence. The gentlemen stopped their work and stared at me. Right at the back a bald official wearing glasses stood up.

'Are you responsible?' I shouted.

Apparently he was very frightened. I switched from anger to amiability, chatted him up, asked him to sit down again and said mildly that I had been chasing up my car for two whole days and was not going to put up with this circus any longer. Baldhead said, 'Your car will be outside the hotel in two hours!'

You only have to pick out the right man. He handed Mr Lakmiehr three new forms, told him to have the car inspected in the hangar, and then return with the forms so that car could be released.

Mr Lakmiehr assured me that all we needed now was an official to inspect the car, then we could go back to the harbour. Once again right across the city, then we stood in the same hut. I approached the bald official cheerfully.

'Voilà. Here is Form A, here are three more forms. Put your stamp on them.'

I could see that he was terrified. No, he said, he could not stamp them, that was the inspector's prerogative. I gave Mr Lakmiehr one of my ugliest looks.

'Where is your car?' asked the customs inspector in Building 4.

'In a hangar,' I answered.

Then he was not responsible, lamented the inspector. The hangar came under its own police. But the hangar police swarmed round us. Their colleagues' information was false, the customs for freight despatch in Hall 7 was responsible for my car, there I would get a release document and I could get into my car straight away.

Hall 7. Inspectors arguing. I went up to one group.

'Gentlemen, I appreciate your hospitality, but what goes on here is giving me a nervous breakdown. Have any of you heard of a *carnet de passages*?'

Shoulders were shrugged. I showed the bundle of forms and asked for the last decisive stamp. Another official went to the hangar with me.

I saw my Range Rover again. On a platform two metres above me, still firmly held by the blue strap. The inspector shook his head. 'The car must come down. How can I inspect it?'

'Everything you want to know is in the *carnet*!' I said.

'Can you prove that the details in it are identical with those of the car?'

I clambered on to the platform, with the *carnet* in my left hand. Out of his sight I shouted down to the inspector all the details from the *carnet* with a slight hesitation each time as if I was reading from the parts of the car. He gave a quick look at the car above him and scrawled his signature on the form. It was in the bag.

I asked the hangar guard who did the work there. He sent me to a little hut in which a man was sleeping. I woke him up gently and told him I was going to drive to the harbour to fetch the 'licence'. Would he please get the car down from the platform and I would pay him well.

Once again right across Karachi. I went up to my baldhead in the customs house. 'Right. Here are all the forms. All stamped; there's nothing missing.'

He smiled and offered me a chair. Had I got three minutes . . . It didn't really matter to me any more. I waited for

two hours. About 1900 hours my *carnet de passages* was stamped. Mr Lakmiehr said gently that it was pointless to go to the airport now. It was the only remark he made that day during our hunt for the stamps.

19 January. At eight Mr Kakmiehr was happy to announce that everything was settled. All we needed now was a gate pass. 'What's that?' I asked. New snags were looming up. Mr Lakmiehr said that the hangar was cut off from the street by a barrier. Soldiers guarded it and in order to drive out one needed a gate pass.

As no one was prepared to issue me the blasted gate pass until noon, I said I was going to the hangar to get in the car and crash through the barrier. Mr Lakmiehr, who by now believed I was capable of it, beseeched me not to do it. I would be shot at and he would get into trouble with Air France who had seconded him to me. I went to the hangar.

The Range Rover was still on the platform. I asked some workers to get it down and I would pay them well. After a lengthy conference three men began to undo the blue strap, taking their time. About 5 p.m. the car was on the ground again. Then I had an eye-opener. The petrol tank was empty, the batteries were not connected and the tyres were at half-pressure—our disastrous work at Orly! I asked a taxi driver to buy a can of petrol, then I opened the tool kit and connected the batteries while Willie pumped up the tyres. At 7 p.m. the taxi driver returned. Knocking off time at the airport. Leaving now was out of the question.

20 January. In the airport at 8 a.m. I asked Mr Lakmiehr, 'Have you got the gate pass?' No, he croaked, it could only be issued by the airport director and he could not be reached at the weekend. What did he mean, weekend? Was it Saturday already?

'Where does the director live?'

That really upset the Pakistani. He was an important gentleman. I would have to wait until Monday. After forking out a goodly bundle of notes, I obtained the address of the almighty one. After a taxi ride of at least 30 km we stopped outside a villa with a lovely park. A female with a veil over her face said that the director was absent. 'All right,' I said, 'I'll wait in the park till he returns.'

Soon afterwards a young man put an end to my sit-in. I

handed him three English versions of my books and asked for two minutes' conversation with the director. I was shown in, described the four-day battle for my car and asked for his signature on the gate pass so that I could at last be master of my own property, my freedom and my valuable time. The director took the form, scribbled on it with a green felt-tipped pen and handed to me without a word. Perhaps he did not speak at weekends.

Mr Lakmiehr looked at the directorial signature as if it was the sign of a miracle.

At last! Into the car and out of this bureaucratic hell. I reached the barrier. The soldier wanted to know what the contents of the car were. I told him in a tone that suggested I was worried about his future not to make any difficulties, because the car had been cleared by the very highest authority. The soldier slunk into the guard house and the barrier rose—automatically.

We were free. After four and a half days spent in 23 offices getting 23 signatures and covering 300 km in taxi rides.

We made Lahore in west Pakistan our first destination, a city of 1.3 million inhabitants, and an important industrial and cultural centre with the famous Punjab University.

To get to Hyderabad on the lower Indus, the map promised us a road 100 km long, which the Pakistanis enthused about as a super-highway. We got a taxi driver to guide us out of Karachi to the main road through bustling streets with bazaars and slum districts teeming with people. It turned out to be a badly asphalted country road. Although all the car windows were open, the thermometer inside read 41 °C!

The Indus is one kilometre wide near Hyderabad. Its waters are a frothing brown broth which flows through Pakistan from north to south. It is what makes the country viable.

Although it was long past noon, the heat got even worse. About every 40 km we passed small settlements where soft drinks—naturally Coca Cola like everywhere else in the world—were on sale at stalls. That afternoon we both drank 14 bottles, but our tongues were still stuck to our palates.

There are as many buses in Pakistan as there are Fiats in Italy. They are painted in glaring colours, bedecked with Christmas tree decorations and crammed as full as if everybody in the Indus valley was travelling. Herds of goats and

camel caravans share the traffic as do carts drawn by buffaloes and oxen. At the roadside people cook, pray and sleep. Many travellers carry their beds with them. A wooden framework with ropes lashed across it. A practical idea which ensures ventilation all round, something that undoubtedly benefits these travellers.

The buses run on diesel fuel and from their exhausts float black banners which would drive Western environmentalists to protest marches, but the climate is too oppressive for such activities here. People only demonstrate where it is no effort, where they can drive to the scene in their own cars and go home comfortably after the great battle. Protest needs a certain comfort. Wasn't it Lenin who recommended that demonstrators should be served a good hot meal, because it is hard to demonstrate against hunger on an empty stomach.

There are hardly any private cars. We counted only four on the 1300 km trip to Lahore. That is why all the pumps supply diesel even when they proudly announce petrol. You have to take damned good care that the attendants do not fill the tank with a mixture your engine cannot digest.

Although day-time driving demanded my full attention, night-time driving was the worst I have ever experienced. The buses drive in the middle of the road with their headlights on. Camels, oxen, buffaloes and goats have no luminous strips on their flanks. They pound through the darkness regardless of the highway code. Large groups of men sleep right up to the road surface. If you are blinded by lights, you can only stop or jolt into the fields.

At three o'clock at night we came to Multan, a town of 350,000 inhabitants on the Chenab, one of the five rivers of that part of India that rises in the Himalayas. Strangely enough I have never come across the name in a crossword puzzle.

In the hotel we could not sleep because of the clammy humid air. Like ourselves the fan had given up the ghost.

We had to follow our nose or use the compass for the signs are mostly written in the Persian variant of Arabic script, *Nastaliq*. You cannot ask for information because the Pakistanis either speak one of their 32 dialects or at best the official language Urdu, and of course we did not understand that. One consolation was that after Lahore, the border town with India, we could get by with English.

About nine o'clock we drove through a wrought-iron gate, signposted the 'Frontier of Kashmir', and only 500 m further on we passed through a much bigger iron gate painted in the Indian national colours, 'Welcome to India'.

The 250 km long Indian road from Wagah to Jammu differs only from the Pakistani super-highway in that large numbers of cows swell the animal traffic. Cows always have the right of way here. They can do as they please. If they feel like it, they lie down in herds in the middle of the road. Gradually you begin to hate these harmless bovines.

In India you learn a great many facts about the sacred cows that change any preconceived opinions. When I said that the sacred cows should be slaughtered, I was told that these miserable skinny creatures still play an important and irreplaceable part in everyday life. I wondered how that could be, thinking of the beautiful fat cows in the Swiss meadows with their bursting udders. The wretched cows on India's streets supply only half a litre of milk daily, but that is an important source of nourishment in a country where hunger dogs people like a shadow. I had already noticed that dried cowdung was busily collected as fuel by the natives, but I was amazed to hear that it supplied more heating fuel than all the coal won from the West German coalfields. The third reason for the presence of cows on all the streets was particularly illuminating. They eat all refuse that is in any way digestible. So they are simultaneously dustmen and hygiene inspectors! But why are they holy? Because Hinduism strictly forbids the slaughter of cows and the 300 million people Hindus in the Indian union watch carefully over this religious law.

From Jammu you can see the giant mountains of the Himalayas. Jammu has more than 3½ million inhabitants and is the capital of Kashmir in winter, a role adopted by Srinagar in the summer. This move by the authorities is easily understood once you have spent January in Jammu. We were dried out by the heat at this time of year and enjoyed Srinagar in Kashmir, a region the travel guide calls the Asiatic Switzerland.

The map gives 300 km as the distance from Jammu to Srinagar. By the evening we would be able to breathe in refreshing air at a height of 1768 m.

This hope dwindled with every kilometre. I have never seen

so many soldiers on the march. Even these military columns were not allowed to frighten or crowd the cows. Perhaps they can prevent wars—and then they would indeed be 'sacred'. We wound our way up to a height of some 2000 m past mountain villages with a Tibetan character. In a flash the hothouse air of the Indus valley was blown away. Spicy clear mountain air made our spirits rise. We were in the foothills of the Himalayas.

Srinagar!

Factually and without exaggeration one could describe the town as the 'Venice of Asia'. It is traversed by many canals teeming with boats, gondolas and moored houseboats, especially on Lake Bal which borders the town to the east. Srinagar lies on latitude 34, the same as Gibraltar and Damascus. The average summer temperature is 30 °C, in winter 3–4 °C.

Srinagar lies at the outlet of Lake Wular in the Kashmir valley. There is every justification for calling this valley 'heaven on earth'. Former rulers laid out parks of exceptional beauty, great extent and unusual floral richness, especially the garden of Shalimar, praised by poets, in which wooden bridges cross still pools.

However delightful it looks, it is all on the surface. There is something wrong with this holiday paradise. Kashmir's Asiatic tradition cannot adapt to modern ways. Up here the streets are choked with the same filth (Srinagar has half a million inhabitants) as down in the valleys. The most primitive hygiene is lacking. Although the drinking water is filtered, it is still a yellowish colour. Revolting.

Here as elsewhere one senses how many expensive shipments of foreign aid are wasted pointlessly. Medicines perish because of a shortage of refrigerators. If there are any, they do not work, with few exceptions. Surrounded by dirt from birth, the natives are immune to the bacteria and viruses prevailing here. They are dangerous to foreigners. Mortally dangerous. If this delightful region is to be opened up, as the intention is, to money-spinning world tourism, there is a lot to be done first.

The population are industrious. From the age of six, chil-

Are you sure you don't want a girl?' asked 12-year-old Mahmud.

The men in Kashmir wear the *kipa*, like the Jews of the Old Testament and present-day Israel.

dren work in the fertile fields and many small workshops. Mediaeval. At a filling station I was served by a 12-year-old, Mahmud, a nice boy. He asked what services I wanted. As I needed nothing except petrol, he asked if he could procure a girl for me. I asked, 'Why aren't you at school?'

'I have no parents,' he answered, 'and we've all got to live. Are you sure you don't want a girl?'

The little pimp was disappointed when a rich foreigner—all foreigners are rich—refused his offer.

The physical similarity between the Kashmiris and the Israelis is astonishing. They are of the same stature, have the same almond eyes and similar noses. The boys are circumcised here, too. As in ancient Israel the dead are buried in an east–west direction. Like the Israelis, the Kashmiri men wear a *kipa*, a little cap, on the back of their heads.

As we drove through the valleys of Kashmir (without snow in the winter), we constantly felt that we were travelling through a biblical landscape and living among the biblical folk of the Old Testament. Kashmiri itself, the language of the

country, has much in common with Old Aramaic, the oldest branch of West Semitic, in other words the language that Jesus and his disciples spoke. I give some examples below:

Hebrew	*Kashmiri*	*Meaning*
akh	akh	alone
ajal	ajal	death
awa	awa	blind
ahad	ahad	at once
hamah	humaham	noise
loal	lol	love
qatal	qatal	murder
qabar	qabar	grave

There are too many features common to Israelis and Kashmiris for them to be explained as coincidences.

A legend firmly held by the Kashmiri people says that the Kashmir valley was really the *promised land* that Moses promised the children of Israel. Moreover they claim that the present-day Kashmiris are direct descendants of an Israeli tribe. Popular tradition here astonished me. The Kashmiris say that the Exodus—contrary to the biblical account—did not start from Egypt and wind through the Sinai Desert for 40 years to end up in Palestine. According to them, the Exodus started from Egypt and traversed the (present-day) countries of Jordan, Syria, Iran, Afghanistan and Pakistan to the highlands of Kashmir.

We must take this version seriously, for if you look at the map, it makes more sense than the chaotic and aimless movement of masses in the deserts of the Near East. If we consider the Kashmiri tradition, many of the battles which the Israelites had to fight for 40 long years begin to make sense. What battles would they have been exposed to in marching round the Sinai Desert? There were no enemy alien peoples there. On the long trek to Kashmir, on the other hand, the wandering Israelites would really have had to fight their way through against opposing forces. The land frontiers they reached were under the dominion of kings hostile to nomadic peoples who poured in with bag and baggage and a train of carts and cattle.

The legend also states that Moses died in the Kashmiri

highlands. Traditions have it that the prophet was active there and that Solomon had his throne there, too. Following this legend the local mountain near Srinagar is still called Takht-i-Suleiman, the Throne of Solomon, and 30 km south-west of Srinagar lies the tomb of Moses on Mount Booth, as every Kashmiri knows! This fact is also noted in the Bible:

> And the Lord said to him (Moses), 'This is the land of which I swore to Abraham, to Isaac, and to Jacob, I will give it to your descendants. I have let you see it with your eyes, but you shall not go over there.' So Moses the servant of the Lord died there in the land of Moab, according to the word of the Lord, and he buried him in the valley in the land of Moab opposite Beth-Peor; but no man knows the place of his burial to this day.

What if . . .

Suppose that Moses had not led the Israelites to Palestine, but to the highlands of Kashmir. Tradition assures us that Moses acted on the orders of the Lord, the same Lord who destroyed the attacking Egyptians and preceded the Israelites in a pillar of cloud which glowed red at night. The Lord provided the Israelites with manna from heaven on their long wanderings, so that men, women and children would not perish in the wilderness. There are many deserts to cross on the way from Egypt to Kashmir. Could the Lord have had an interest in guiding the Israelites to Kashmir?

I remembered the mutiny described by the antediluvian prophet Enoch—the rebellion of 200 'angels' against their 'Lord'. In Chapter 6 of his apocryphal (Greek for 'hidden scriptures') book the prophet Enoch writes:

> After the sons of men had multiplied, beautiful and pleasing daughters were born to them in those days. But when the angels, the sons of heaven, saw them, they lusted after them and said to each other: 'We want to elect wives for ourselves from among the daughters of men and beget children.' But Semyasa, their chief, said to them: 'I fear that you will not carry out this deed, so that I alone will have to atone for a great sin.' Then did they all answer him and say: 'We shall all swear an oath and bind ourselves

mutually by curses not to give up this plan, but to fulfil the work we have intended.' Then they all swore together and bound themselves mutually by curses. In all they were 200, who came down on to the summit of Mount Hermon in Yared's days. And they called the mount Hermon because they had sworn on it and bound themselves mutually by curses. These are the names of their leaders: Semyasa, their chief, Urakib, Arameel, Akibeel, Tamiel, Ramuel, Danel, Ezeqeel, Saraquyal, Asael, Armers, Batraal, Anani, Zaqebe, Samsaveel, Sartael, Turel, Yomyael, Arasyal ... These and all the others with them took themselves wives, each of them chose one, and they began to go in to them and to defile themselves with them. They taught them charms, incantations and how to cut roots, and revealed healing plants to them.[1]

Further on Enoch describes the conspiracy and even the functions the unusual 'angels' had to exercise. I did not need my imagination stimulated to recognise these 'angels' as something quite different. None of the qualities described by Enoch tallies with the benevolent and helpful attributes ascribed to biblical angels. Biblical angels did not beget children, did not seduce the daughters of earth and did not bind each other mutually by 'curses'. Enoch's angels were mutineers against the Lord. A considerable team of 200 members rebelled against their commander, who—as Enoch knew—finally vanished into space in a spaceship and left the mutineers behind on the earth.

What did the mutineers have at their disposal, how could they maintain their existence? They still had tools, a few technical apparatuses, perhaps a caterpillar track vehicle, a craft like a helicopter, but they had nothing to conquer interstellar space. Nevertheless, they had something left: their knowledge! The mutineers would have had some valid reasons for their rebellion. Perhaps the commander was too strict with them. Perhaps they were fed up with the monotonous everyday work on board. All these are purely speculative assumptions. But now they were on a planet with men on it who were very like themselves. The mutineers decided to turn these men into servants and serfs who would enable them to lead a riotous life.

The mutineers did not stay together long. They split into groups, divided up the remaining appliances and decided to keep each other mutually informed about their activities by radio. Then they went off to different points of the compass. One group sailed over the ocean to South America, another to North America, a third to the Pacific and a fourth to Asia. Dividing up the earth caused them no problems. They behaved exactly like the mutineers on the *Bounty* thousands of years later. Its crew took over the ship in the South Pacific in 1787 and made themselves independent in that ocean. Each one of them wanted to be a king. Some of them fulfilled their dream, others were murdered by the islanders.

And one of the groups described by Enoch flew over the highlands of Kashmir, perceived the indescribable beauty of the landscape and sensed the ideal climatic conditions. A good place to live! But alas, 3000 years ago or whenever it was—I do not trust the biblical dating—there were no men in the Kashmir valley, no domestic servants. Being used to an aristocratic life, the gentlemen from another star could not imagine a day without servants, even in their worst nightmares. Rearing a domestic troop from a single pair of humans would take too long, they felt, so they decided to guide a tribe from Egypt to the Kashmir valley. That would be the land flowing with milk and honey. No sooner said than done. The mutineers led the Israelites out of Egypt to the Indian highlands! So they used columns of smoke and fire to show the way by night. Without these signals the goal could not have been reached. Marches through deserts are worse than wrong turns in a maze. The 'gods' would have to help. Wherever it was necessary, they intervened in battles so that their future domestics would arrive at their destination unharmed and victorious.

Those are just thoughts that came to me on the long journey. But I also thought about something else.

In order to reach Kashmir the Pir Panjal mountains have to be crossed. At the lowest point at which they can be passed, they are still 2510 m high. Today this pass is pierced by the Banihal Tunnel at a height of 2180 m. The fact that the Kashmir valley was uninhabited thousands of years ago can presumably be ascribed to this mountain barrier.

If we spin the colourful thread further, the Israelites now

had their own land which they could cultivate for themselves and their 'Lord'. Then as now the Israelites, now the Israelis, were and are an industrious obedient and intelligent people, obviously the reason why the mutineers brought this highly cultivated tribe into the country. With its help, temples, palaces and gardens soon came into being. The Kashmir valley became the promised land, a paradise.

These admittedly bold speculations have a snag. According to biblical exegeses King Solomon (*c.* 965–926) had a temple built in Jerusalem. Did King Solomon, like his predecessor David, not belong to the group which was piloted to the Kashmir valley? Did Solomon spend some time in Kashmir and some time in Palestine? No one can be in two places at once. Not even Solomon!

The *Kebra Nagast* is the oldest Ethiopian traditional scripture. In Chapters 30, 52, 58, 59 and 94 it tells at length about a 'heavenly car' which King Solomon inherited from his forefathers and used zealously.*

'But the King . . . and all those who obeyed his word, flew on the wagon without pain or suffering, and without sweat or exhaustion, and travelled in one day a distance which (usually) took three months to traverse.'[2]

From Jerusalem to Srinagar it is barely 4000 km as the crow flies. On foot this distance would take more than three months to cover. Given a day's march of 20 km, one could cover 600 km in a month and 1800 km in three months. And the land route is infinitely longer than the distance as the crow flies. But that is just the distance Solomon is supposed to have covered in one day in his flying machine, according to *Kebra Nagast*.

If the king had been in the air only 12 out of the 24 hours his craft would have had a speed of 150 km per hour. If we assume that he flew only eight hours a day, his heavenly car would have had an average speed of 225 km per hour, not the speed of jet planes, but fast enough to go back and forth between Jerusalem and Srinagar several times a month.

Supposing King Solomon had made an interim landing about half way between Kashmir and Israel, there should presumably be indications of such a landing in present-day Iran. Heavenly air machines, not an everyday sight in those

* The story of the heavenly vehicle is described in detail in *Signs of the Gods*.

days, could not have started and landed without being spotted by the inhabitants.

In fact the sugarloaf mountain Takht-i-Suleiman, Throne of Solomon, like the one near Srinagar, is located in north-west Iran at a height of 2200 m. On the *Iranian* Throne of Solomon there was a Sassanid fire temple in which fire and water were worshipped. Fire and water? They do not like each other. When they meet, steam arises. Was Solomon's flying machine driven by steam? Was the technique of the steam engine known, in the form in which it was first discovered by the Frenchman Denis Papin (1647–1712)? Did they worship fire and water because of this wonder? Oddly enough the neighbouring mountain is called Zendan-i-Suleiman which means 'Prison of Solomon'. Perhaps the pilot went off course and made a forced landing there.

Quite apart from any bold flights of imagination, the fact remains that there are two mountains called after Solomon one in Iran and one near Srinagar. There were temples consecrated to Solomon on both of them. The edifice in Iran no longer exists, but the temple near Srinagar is still in use, although it has been rebuilt many times. Incidentally, my assumption explains why Solomon had to fetch architects and master builders from Lebanon to build the temple at Jerusalem. His own people were working in the valley of Kashmir.

It is obvious that these hypotheses, which will take many of my readers' breath away, are connected with my extra-terrestrials. It is not clear what they can have to do with Jesus who lived 1000 years later. Until I had hard facts to handle, I let my thoughts dwell on the matter.

The sect of the Essenes on the Dead Sea, who were bound by the Mosaic law, knew that at least one Israelite tribe lived in distant Kashmir.[3] They knew old writings from Solomon's reign and his Asiatic connections. Perhaps there was still contact in Jesus' day between the Essenes and their fellow countrymen who had gone to Kashmir. So these are my assumptions about how and why Jesus might have come to Kashmir.

Jesus was nailed to the cross at noon on a Friday. The Sabbath, the seventh day of the week, begins at midnight on Friday. It is the day of rest, of sanctification and spiritual renewal. The Roman occupying forces were intelligent

enough to respect this religious law. Consequently no one who was punished could continue to hang on the cross on the Sabbath. Contrary to general opinion the Roman punishment of crucifixion was not inevitably a death sentence, but rather a barbarous form of torture which strong and healthy bodies, controlled by a stubborn will, could survive.

The Bible tells us that a Roman legionary pierced Jesus in the side with a spear and that blood and water flowed from the wound. That means that Jesus was not dead. Joseph and Nicodemus, in the presence of some women, including the mother of Jesus, were allowed to take the Master down from the cross. The men allowed the Roman soldiers to go on thinking that the Lord was dead, covered the martyred body with cloths and treated the wounds with salves and herbs in a secret place, perhaps the monastery of the Essenes, who had some outstanding doctors. That is the only way in which the following biblical text becomes intelligible: 'Why do you seek the living among the dead?', the question two men asked the women at the tomb (Luke 24.1).

John the Evangelist does not mention the resurrection and the statements of Matthew, Mark and Luke are contradictory. The biblical account relates that Jesus showed himself to his disciples after being taken from the cross and that he even allowed Doubting Thomas to touch the wounds in his hands and feet.

The Romans heard the news that Jesus was alive and began to look for him. As a well-known figure Jesus dared not show himself in public, a difficult task, for all the territory around present-day Israel was occupied by the Romans—Egypt to the south, Lebanon and Turkey in the north, and Europe to the west. There was only one suitable direction to flee in—eastwards! Were the Essenes in action again with their fifth column? Did they advise Jesus to fly in the direction of Kashmir because they could assure him that he would meet fellow countrymen there?

The Romans installed Saul as a persecutor because they knew that as a trained officer he hunted the Christians down. Saul, the crafty fox, realised that Jesus would have to go via Damascus in an easterly direction to escape persecution. Outside Damascus Jesus made Saul blind. 'Saul, Saul, why doest thou persecute me?' (Acts 9.4.) In conversation Jesus

managed to convince the Romans that he was no longer dangerous to them and they could let him go on his way.

After this encounter Saul changed his name to Paul. He turned into a missionary to the heathens, in other words he was the first non-believer won over to Christianity by Jesus himself. Now Paul preached the doctrine of Jesus by which all are equal before God, a political programme of an explosive nature, because it was liable to misinterpretation. Paul's missionary journeys were punctuated by revolts by slaves—reason for the first post-Christian emperors to persecute the youthful Christian community in a bloodthirsty fashion. The Roman Saul/Paul was finally crucified head downwards, payment for his treason in the eyes of the Romans.

Was Christ's mother Mary unable to stand the rigours of the journey? Did she die a few kilometres west of present-day Rawalpindi in Pakistan? In any case the chapel *Mai Mari*, 'Last Resting Place of Mother Mary', still exists there today.

If we follow Indian traditions, Jesus continued on his way to Kashmir. He had escaped from his Roman persecutors. He would certainly have been given a friendly reception in Kashmir by the exiled community living according to the strict precepts of the Essenes. He would have married and died at a great age, venerated both by simple men and mighty rulers.

These thoughts put together from my reading and various pointers, though they contained many question marks, kept me going until I could follow up visible tracks.

Professor Dr F. M. Hassnain, with whom I had exchanged several letters in which I had told him of my forthcoming visit, was waiting for me on the terrace of the Hotel Oberoi, a former maharajah's palace. He is in government service and as Head of Archives not only looks after present-day state papers, but also documents from the past. I hoped that he would help to clarify my daring conjectures. Now he sat next to me under a sunshade. All was peace around us. Our view of an Eden-like park and the waters of Srinagar sparkling in the sunlight formed the ideal background for a quiet conversation. Only as the days went by was I to realise the respect felt for this amiable scholar by the highbrows of the city. Chance had led me to a really well-informed man.

When I began to talk about Jesus' possible sojourn in Kashmir and pointed out that the story of the existence of

Jesus' tomb was not enough for genuine conviction, Professor Hassnain obviously felt my scepticism was asking too much.

'The chain of proof has no gaps in it. It can stand up before any court!'

'Thank you, Professor, I am anxious to hear it.'

'I assume,' lectured Hassnain, 'that you have noticed during your drive through our country how similar the population of Kashmir is to the inhabitants of historical Palestine. These similarities are not confined to appearance and language, or even to religious rituals. You can recognise the similarities in ancient temple buildings, which all look like miniatures of the temple in Jerusalem. You saw the Throne of Solomon mountain and the Garden of Solomon barely 15 km from here. The mountains mentioned in Deuteronomy that you seek in vain in Palestine are here in Kashmir and, honoured sir, the tomb of Moses is also here in our country. No, believe me, when Jesus made his way here, he wasn't looking for some vague destination, but *the land of his fathers*!'

'How did Jesus know about this country?'

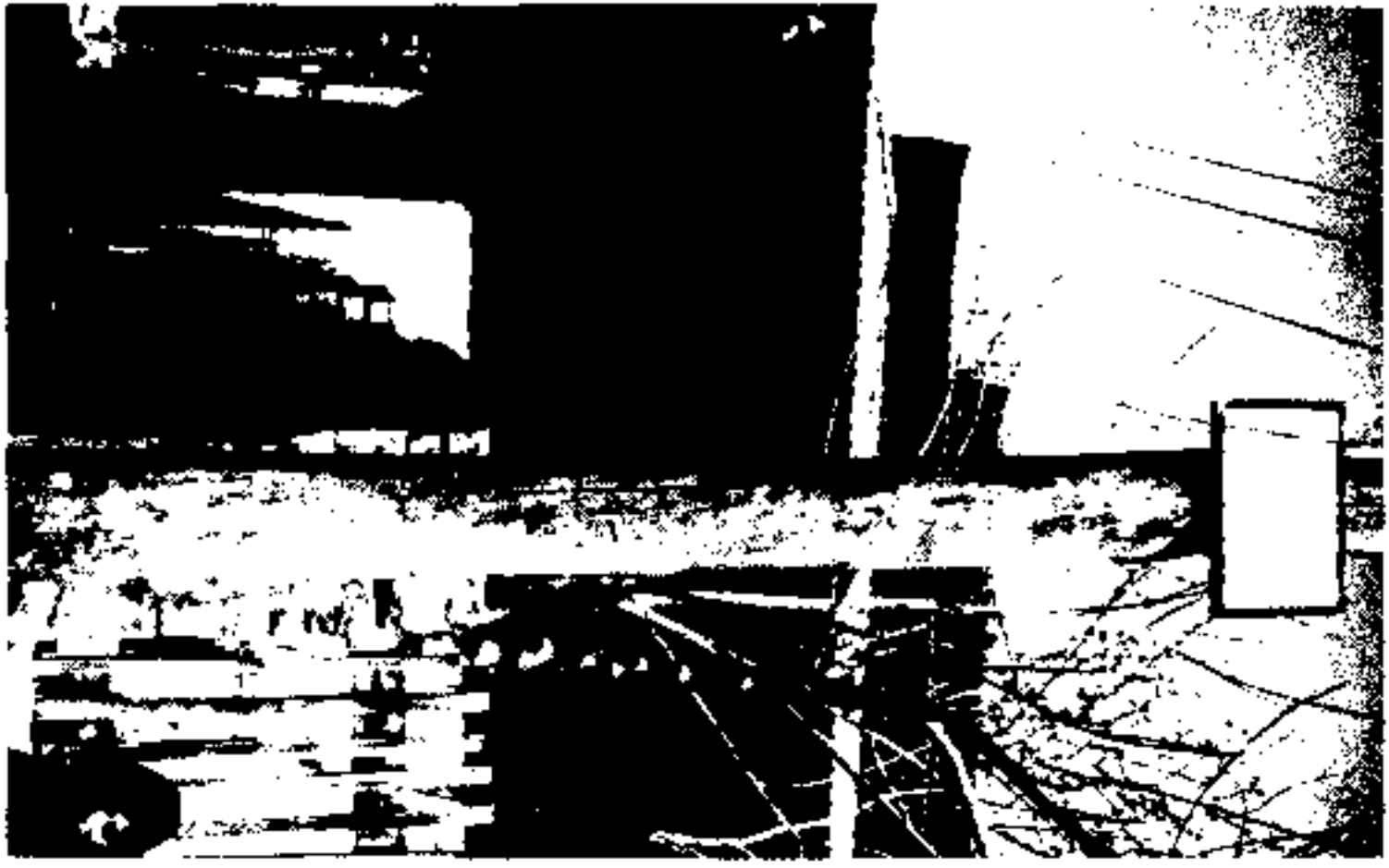
Professor Hassnain looked at me and took a drink of iced tea with lemon.

'There are several possibilities. Perhaps he knew about it from ancient writings in the Essene monastery. If there were no written references, there were oral traditions, after all it was not long after the Exodus. And there is one underestimated possibility. You know that Western Christian scholars cannot fill the gap in Jesus' life between the ages of 12 and 13. So we must ask whether Jesus had not been in our country from his boyhood.'

As the professor was pleading for accuracy, I asked 'There is an enormous distance of 4000 km as the crow flies between Jerusalem and Srinagar. How did Jesus cover it?'

The professor grinned and answered after lighting one of his super-king-size cigarettes:

'My dear fellow, think of the Canadian settlers in our century. They crossed from the east to the west coast—700 km—without railways, airplanes or cars. On foot, with families and household in the simplest of covered wagons. Given a day's march of only 15 km the distance from Palestine to Kashmir could be covered in a year and in biblical times the



people were definitely much better walkers than we are today.'

He argues well, this professor, I thought, but I persisted.

'Is there anything tangible to measure or photograph?'

The question obviously startled Hassnain; he sat up stiffly in his chair.

'We have the tomb of Jesus, mentioned in documents for more than 1900 years. The inscription reads: "Here lies the famous prophet Yuz-Asaf, called Yusu, prophet of the children of Israel." I should tell you that Yuz-Asaf and Yusu are identical with the name of Jesus. They are the local transliterations.'

The next day Professor Hassnain took us to a narrow alley which is in perpetual gloom. It is called 'A Prophet Will Come'. Our goal is Rauzabal Khanyar, a building combining elements of church and mosque. Unauthorised as we were, we would not have been allowed to enter without Professor Hassnain. He is known and respected and anyone accompanying him profits by his authority.

We all took our shoes off and said a prayer along with the custodian and his family. I admit that I felt uneasy. It was an uncanny thought that I might be close to the bones of the genuine Jesus.

The room is rather dark. A cross with lighted candles rests on beams. In the centre stands a delicately carved shrine protected by a lattice of narrow strips of wood. Incense sticks glowed in a bowl on the floor.

It is not only a place of pilgrimage for Christians, for Hindus and Moslems venerate the burial site, too. Although they look on Muhammad as the highest prophet of god, Jesus means much to them as an eloquent prophet and exemplary man.

At one point, which could not be entered, I saw footprints in the stone floor. 'What is that?' I whispered.

'Those are Jesus' footprints,' said the custodian, mumbling a prayer, lowering his head and folding his hands across his chest as pilgrims to Christian holy places do.

'May I touch the stone?' I asked. Without interrupting his prayer, the guide nodded with monkish meekness. Measuring

Rauzabal Khanyar, the place of pilgrimage, lies in a gloomy alley.

with my outspread hand, I estimated the prints to be equal to a size 12 foot. I felt depressions and unevennesses in the prints. The marks of wounds? That is what they claim here.

In a whisper I asked Professor Hassnain if I might be allowed to go into the tomb. My request would probably have been firmly refused, if Dr Aziz Kashmiri, author of the book *Jesus in Kashmir*, had not joined our group as agreed. He supported my request.

The shrine was opened. I said a short prayer to please those who were watching me. I got my camera ready and went inside through a small lattice door. Looking back on it I have to admit that I was annoyed for some inexplicable reason. At the time, I remember, I was forced to concentrate on complicated shots. The flashlight blazed. Sacrilege? I thought of the Jesus of my schooldays who, so we were taught, understood all kinds of human behaviour. I believe that he would also have understanding for my curiosity. I fished the compass from the breast pocket of my bush jacket. The stones of the tomb were aligned in a west–east direction.

I took photos with various objectives. I kept busy because I was disappointed. Does this tomb, this stoneclad burial place, offer conclusions about what is hidden in it? Is everything that is claimed about it simply a chimera? These stone slabs must be raised, the real grave must be opened. We would not have genuine proof until bones with wound marks in hands and feet were revealed. Perhaps the funerary adjuncts would also provide information.

One might also imagine that, in the case of such a famous figure as Jesus, a scroll with details of his life might have been laid in his last resting place. The exact time of his death could be dated from the smallest piece of bone.

'Professor, why is the grave not investigated so that assumptions would become facts?'

Hassnain explained that he had been trying to achieve this for years, but without success. The highest circles were afraid of offending the religious susceptibilities of Christians, Moslems and Hindus. He winked at me.

'Write about it! Your books are read and discussed everywhere. Besides it would be a great success if scholars from all over the world could obtain permission to open the grave from the highest Indian authorities!'

'Even an X-ray examination of the grave could supply important evidence,' I said, 'without disturbing the bones or the mummy or whatever is hidden down there.'

'Perhaps,' said Hassnain resignedly.

On our way back to the Hotel Oberoi I made it abundantly clear to the professor that this tomb could not convince anyone of the correctness of the assumption that Jesus had been in Kashmir, grown old there and been buried in Srinagar.

Hassnain looked at the teeming mass of humanity in the street and said, 'I freely admit that, but think of the documents!'

'Which documents?'

'Tomorrow I will show you two inscriptions on the Throne of Solomon mountain. One says: 'In this time the prophet Yusu preached.' The date reckoned by the Gregorian calendar is AD 54. The second inscription says: 'He is Jesus, the prophet of the children of Israel."'

'Could not one of Jesus' disciples have visited Kashmir in 54 to give rise to the inscriptions. The presence of Jesus was not needed for that.'

'Come to the library tomorrow. There I'll show you the Sanskrit book *Bhabishya Maha Purana*. It dates to AD 115. On pages 465 and 466 in verses 17 to 32 a meeting between Jesus and the ruler of Kashmir is described. I am asked about it so often by Western visitors that I always carry a transcript of it in my pocket. I can dictate the text on to your tape machine if you like.'

If I liked: Now I have a tape spoken in English in my archives. This is what Professor Hassnain read to me:

> During the reign of Raya Shalevahin—that was AD 78—the monarch had himself carried over the cool hills of Kashmir. There the king saw a happy person in white linen sitting on the grass, surrounded by many listeners. Shalevahin asked the stranger who he was. The man in the white robe answered in a calm and cheerful voice: 'I was born of a virgin. I am the preacher of the Mlacha religion of the true principles.'
>
> The king asked: 'What kind of religion is that?'
>
> 'Omaharay (great lord), I wandered and preached in the land of Mlacha (geographical Palestine) and taught the

truth and preached against the destruction of traditions. I appeared there and they called me Masih (Messiah). They did not like my teaching, rejected the traditions and judged me. I suffered much at their hands.'

When the king wanted to hear more about the religion which was unknown to him, the man in white linen answered: 'The religion is love, truth and purity of heart, and that is what I was called Messiah for.'

An exciting text!

After we had said goodbye outside the Oberoi, I sat out on the balcony for an hour in the early evening by the light of a storm lantern. In one great panorama I saw the river Jhelum which runs through Srinagar and on the slopes the temples from the Hindu period, the fourteenth- and fifteenth-century palaces and mosques. After an exciting day I regained my calm, reflected on what I had heard and played the tape over and over again.

According to this Sanskrit tradition from the year AD 115, Jesus-Masih answered the king: 'I was born of a *young woman*, I taught the truth and preached against destruction of the traditions . . . *they rejected the traditions and judged me* . . .'

The evangelists also tell us that Jesus was born of a virgin—a young woman. We know that Jesus preached the genuine doctrine of the tradition since the Dead Sea Scrolls[4] were found in the caves near Qumran in 1947. They give vital information about the beginning of the era which dates from the birth of Jesus. In AD 66 the Essenes put their most valuable scriptures in clay vessels and hid them in the caves above Qumran. Found by chance, the caves on the Dead Sea saw the start of a real thriller.[5]

Some scrolls went half-way round the world by routes varying from black to grey; they were put under the microscope in universities and monasteries and gold, too, played a part in the sensational find . . . before the unique documents, which transformed the theological world picture, came into the safe hands of Professors André Dupont-Sommer and Millar Burrows.

These finds prove definitively that Jesus took most of his teachings from the Essenes, for example, the Sermon on the

Mount, the core of his doctrine, and the battle of the 'Sons of Light' against the 'Sons of Darkness'.

Philo of Alexandria, who lived *c.* 25 BC to AD 50, wrote of the Essenes in his treatise *Quod Omnia Probus Liber Sit*[6]:

> Nor has Palestinian Syria, which is inhabited by a significant number of the very numerous Jewish people, been unfruitful in the cultivation of virtues. Some of the Jews, more than 4000 in number, are known as Essenes; in my opinion this name . . . is connected with the word 'holiness', for in fact they are men who are especially devoted to the service of God . . . They hoard neither silver nor gold, nor do they acquire large estates . . . but provide only the necessities of life . . . they reject everything that could arouse envy among them . . . They do not possess a single slave, on the contrary they are all free and help each other mutually . . . a thousand examples testify to their love of God . . .

The Jewish historian and general Flavius Josephus (AD 37–97) wrote as follows about the Essene community in his *History of the Jewish War*:[7]

> For there are three philosophical sects among the Jews: the followers of the first which are the Pharisees, of the second the Sadducees, and the third sect, which pretends to a greater discipline, are called Essenes . . . They neglect wedlock, but choose out other people's children while they are pliable and fit for learning, and esteem them to be of their kindred, and form them according to their own manners . . . But the management and habit of their bodies is such as children use . . . A priest says grace before meat . . . the same priest . . . says grace after meat . . . They also take great pains in studying the writings of the ancients . . . They condemn the miseries of life, and are above pain, by the generosity of their mind . . . For their doctrine is this, that bodies are corruptible, and that the matter they are made of is not permanent; but that the souls are immortal . . .

This psychogram of a community fits in with what we know of Jesus the loner. As a boy born of a virgin, was his education entrusted to the Essenes? Was the Mosaic law that

there is only one God so firmly implanted in him that as a man he despised Roman polytheism and became a rebel? Did he learn from the Essenes to endure and overcome pain and martyrdom on the cross by spiritual strength? Ought we to dismiss it as coincidence when ancient Sanskrit texts say that the Masih-Messiah told the king that he was born of a maiden and had 'preached the truth against the destruction of the traditions' which was the Essenes' programme?

I saw the trail that led from Srinagar 2000 years back to the time of Jesus and yet further back in time to the gods and the mutineers. If in the future I say with conviction that the tomb of Jesus might be located in Srinagar, I know that Asiatic legends will only bring a forbearing smile to the faces of Western theologians. But they should combine to explain the Indian legend of Jesus! Is that an improper challenge, a heresy? May we not investigate the tomb of Jesus in Kashmir just because the resurrection should preclude the idea of there being any grave? Is it blasphemy?

The question should be answered for the sake of the ultimate Christian truth. If the bones of Jesus are really at that place of pilgrimage, Rauzabal Khanyar, that does not alter his noble teachings. We must be pessimistic as St Paul was in I Corinthians, 15.16–17: 'For if the dead are not raised, then Christ has not been raised. If Christ has not been raised, your faith is futile and you are still in your sins.'

Professor Hassnain showed us the ruins of the temple of Parhaspur, a scene of total destruction for kilometres around.

The terraced steps of the original complex are clearly recognisable. They immediately reminded me of the stone-dressing and building methods of blocks fitted into and over each other in Inca temples in South America, for example above Cuzco in Peru. Just like there, the masses of stone are sawn out of the rock without apparent effort, here as there, there seems to have been no transport problem. Here, as there, one is forcibly given the impression of an explosive destruction, an annihilation that cannot be attributed to the passage of thousands of years. A look at the wilderness, like the daily television shots after bombardments of war areas, forces one to think the chaos could not have been created without an explosion on the Hiroshima scale. If you look

Pyramids reminiscent of the Maya pyramids in the Central American jungle stand in the centre of Parhaspur. Were the same master builders at work?

around from the centre of the original complex, you notice that the thousands and thousands of broken stones are located about the same distance from the centre.

I am as familiar with the stories of the gods and their terrible weapons as I am with my 'one times' table. So to me there is nothing absurd about the idea of destruction from the air.

'Flying machines in old Indian Sanskrit texts.'

Professor Dr Dileep Kumar Kanjilal gave a brilliant lecture with this title to the Sixth Congress of the Ancient Astronaut Society in Munich in 1979.[8] Kanjilal is a professor at the Calcutta Sanskrit College and therefore a leading scholar in that tongue.

Kanjilal's statements, which I can quote with his kind permission, confirm my hypothesis that the 'mutineers' described in action by Enoch still possessed technical apparatuses and simple flying machines when the mother spaceship had been relaunched. The rebel angels, the beings from heaven, had intercourse with the daughters of men and begot children. They were called the 'sons of God' and certainly no longer had the *original* knowledge of the mutineers, who had belonged to the first space team and had grown up on a distant planet. The extraterrestrials' technical appliances dis-

integrated, rusted and got lost during the first centuries after the landing. The children produced by the 'mutineers' and their grandchildren grew up on earth. No one had the knowledge necessary to repair defective apparatuses. Nevertheless, thanks to the technical tradition of processes, the know-how of their forefathers, they were still able to build simple flying machines which gave them immeasurable superiority over their contemporaries.

My ears are open to any other explanation of the processes described in the old Sanskrit texts. They are by no standards obscure secret scriptures. The documents quoted by Professor Kanjilal can be seen in any large Sanskrit library and read, too, if you understand Sanskrit. The message from our Sanskrit scholar in Calcutta is so 'dangerous' for scholars stuck in the same old groove that they—without weapons to defend old points of view—can only ignore or mock it. They have no arguments against the traditions. I quote from Professor Kanjilal's lecture:

> There is a tendency to represent the arrival of extraterrestrial gods and their sexual traffic with terrestrial women, which frequently had consequences, as the discovery of the Vedic texts (the oldest religious literature of the Aryan Indians) and the *Mahabharata* (the Indian national epic).
>
> But if we follow the history of idolatry in India we come across two important works, the *Kausitaki* and the *Satapatha Brahmana,* dating from about 500 BC and telling us about images of the gods. Text and illustrations show forcefully that the gods were originally corporeal beings. But how, and this question must be faced, did these gods reach the earth through the atmosphere?
>
> The *Yajurveda* quite clearly tells of a flying machine, which was used by the *Asvins* (two heavenly twins). The *Vimana* is simply a synonym for flying machine. It occurs in the *Yajurveda,* the *Ramayana,* the *Mahabharata,* the *Bhagatava Purana,* as well as in classical Indian literature. Accurately translated the word *Yantra* means 'mechanical apparatus' and is found widely in Sanskrit literature.[9]
>
> At least 20 passages in the *Rigveda* (1028 hymns to the gods) refer exclusively to the flying vehicle of the *Asvins.*

This flying machine is represented as three-storeyed, triangular and three-wheeled. It could carry at least three passengers. According to tradition the machine was made of gold, silver and iron, and had two wings. With this flying machine the *Asvins* saved King Bhujyu who was in distress at sea.

Every Sanskrit scholar knows the *Vaimanika Sastra*, a collection of sketches the core of which is attributed to Bharadvajy the Wise around the fourth century BC. The writings in the *Vaimanika Sastra* were rediscovered in India in 1875. The text deals with the size and the most important parts of the various flying machines. We learn how they steered, what special precautions had to be taken on long flights, how the machines could be protected against violent storms and lightning, how to make a forced landing and even how to switch the drive to solar energy to make the fuel go further. Bharadvajy the Wise refers to no fewer than 70 authorities and ten experts of Indian air travel in antiquity!

The description of these machines in old Indian texts are amazingly precise. The difficulty we are faced with today is basically that the texts mention various metals and alloys which we cannot translate. We do not know what our ancestors understood by them. In the *Amaranganasutradhara* five flying machines were originally built for the gods Brahma, Vishnu, Yama, Kuvera and Indra. Later there were some additions. Four main types of flying *Vimanas* are described: *Rukma, Sundara, Tripura* and *Sakuna*. The *Rukma* were conical in shape and dyed gold, whereas the *Sundata* were like rockets and had a silver sheen. The *Tripura* were three-storeyed and the *Sakuna* looked like birds. There were 113 subdivisions of these four main types that differed only in minor details. The position and functioning of the solar energy collectors are described in the *Vaimanika Sastra*. It says that eight tubes had to be made out of a special glass absorbing the sun's rays. A whole series of details are listed, some of which we do not understand. The *Amaranganasutradhara* even explains the drive, the controls and the fuel for the flying machines. It says that quicksilver and *'Rasa'* were used. Unfortunately we do not yet know what *'Rasa'* was.

These extracts from the Book of Enoch and ancient Indian tradition may explain what is still considered a mystery today. The ruined site of Parhaspur on which I stood might have been the scene of 'divine' air battles.

In 1979 a book by David W. Davenport, an Englishman born in India, was published in Italy. Its title was *2000 AC Distruzione Atomica*, Atomic Destruction 2000 BC.

Davenport claimed to have proof that Mohenjo Daro, one of the oldest sites in the history of human civilisation and one of my destinations, had been destroyed by an atomic bomb. Mohenjo Daro is 350 km north of Karachi in present-day Pakistan, to the west of Sukkur on the Indus. Davenport shows that the ruined site known as the place of death by archaeologists was not formed by gradual decay.

Originally Mohenjo Daro, which is more than 4000 years old, lay on two islands in the Indus. Within a radius of 1.5 km Davenport demonstrates three different degrees of devastation which spread from the centre outwards. Enormous heat unleashed total destruction at the centre. Thousands of lumps, christened 'black stones' by archaeologists, turned out to be fragments of clay vessels which had melted into each other in the extreme heat. The possibility of a volcanic eruption is excluded because there is no hardened lava or volcanic ash in or near Mohenjo Daro. Davenport assumed that the brief intensive heat reached 2000 °C. It made the ceramic vessels melt.

The author says that in the suburbs of Mohenjo Daro skeletons of people lying flat on the ground, often hand in hand, were found, as if the living had been suddenly overcome by an unexpected catastrophe.

In spite of the interdisciplinary possibilities, archaeology works solely by traditional methods in Mohenjo Daro. They ought to use the former, for it would produce results. If flying machines and a nuclear explosion as the cause of the ruins are excluded out of hand, there can be no research by enlarged teams with physicists, chemists, metallurgists, etc.

The ruined site of Parhaspur is too extensive for the site of a temple. Indian traditions mention destruction from the air.

Kashmir and Bolivia are 1800 km apart as the crow flies, yet this slab is dressed like the slabs at Puma Punku.

At many places in Kashmir one stumbles across mysterious dressed stones, as at Sacsayhuaman above Cuzco! No one can explain such coincidences thousands of years ago.

As this iron curtain so often falls on sites that are important in the history of mankind, I cannot help feeling that surprising facts endangering existing ways of thinking might and should be discovered. A nuclear explosion 4000 years ago does not fit into the scenario? After reading Davenport's book, Monhenjo Daro fascinated me even more, as what I had learnt so far seemed to be only half the truth.

Before continuing my journey to the Indus valley, I had to visit my publisher Ajitt Dutt in Calcutta.

He and his family were waiting for me at the airport. His cries of delight on receiving the portable typewriter were combined with a torrential account of how they had expected me two days ago and had had to send home several thousand people who had come to hear me lecture.

Much as I would have liked to see Calcutta, India's largest city with more than 3.5 million inhabitants and an area of 425 sq km, I hardly set foot outside my hotel room. Journalists struggled for the door handle, radio reporters shoved microphones at me. I refused a television interview

when I heard that there were only 2000 sets in the city. The television age has only just begun here.

The second day passed like the first. What I said the day before was on the front page of the newspapers next to topical political news and photos of Indira Ghandi. (I recognised it from my photograph.) What were they writing about me? I cannot read Bengali script, but it looked as if I was in clover.

An EvD reception committee appeared at midday with two archaeologists, the director of a museum and several university lecturers. As I had already been taught I placed my hands on my breast in an attitude of prayer and bowed. I was told that everything had been well prepared.

What I experienced in Calcutta that evening was more riotous than anything in my worst nightmares. When we drove up to the museum in the reception committee's car about six o'clock, I saw crowds being held back by the police. Was this in my honour? The police towed me into the inside courtyard. A cordon cleared an alley through which I was squeezed into the hall, a large hall with steps, galleries and wide window-sills. Every inch, one could say, was plastered with people. The air was hot, humid and stuffy. Four massive chairs, into one of which I was pushed, stood in front of a screen. A lady anthropologist, an archaeologist and the museum director praised me in such eulogistic terms that I felt terribly embarrassed. With my watch on the lectern, I stood for a minute without being able to speak through the din. Willi was somewhere in the crowd wearing a bright red shirt so that I could seek him out when I wanted a new slide on the projector. I realised at once that I was going to give an abbreviated version of my lecture. Nevertheless, my vocal chords gave out three times. That had never happened to me before; it must have been due to the stifling air.

A wild tumult broke out when I finished. Thousands thronged to meet me. Until that moment, I did not know how one could be so frightened of people. I was pressed against the wall by autograph hunters, but I could not move my hands. Some distance away I saw Willi who was trying to fight his way to me. The pressure of the throng put me on the floor. With my last ounce of strength I crawled into a corner to reach the protection of two walls. Suddenly I saw the police swinging batons. They laid in with a will, but it did

not seem to bother the unrestrained mob. It was an unpleasant scene to have to witness. Was there no window through which I could escape? They all had iron bars. Then the police beat a path through to the car. We got in. Exhausted, bathed in sweat, bedraggled . . . and fairly happy all the same.

The whole of next day I was feeling rather afraid of the second evening lecture at the university. With 240,000 students (!) Calcutta has the oldest and largest university in India. I was told that the lecture would take place in the auditorium for nuclear physics, which was the biggest on the campus, and that the public would be mainly academic.

It did not turn out very academically. Things began when I could not get out of the car because it was besieged by students. Once again the police roughly cleared the way. The students did not mind; they shouted in chorus: Long live Däniken! Can you imagine?

The auditorium was packed to overflowing. I spoke for two hours. You could have heard a pin drop. The volume of the applause at the end was indescribable.

I sensed a wave of sympathy among the faculty leaders. Professors were ready to help me with their specialised knowledge. Sanskrit scholars said they could supply me with a wealth of material from India. They were as good as their word. One scholar assured me that the theories in my books were realities to Hindus that he had always waited for. What I wrote was confirmation of the thoughts of the simple man.

A shy lanky student handed me a book bound in pink. 'That's for you.' I quickly read the title, *Vymaanika-Shaastra Aeronautics,* by Maharishi Bharadwaaja.[10] I asked politely what the book was about. The student smiled.

'It is an extremely old collection of texts that will interest you.' He disappeared into the crowd.

Back at the hotel I opened my present and was afraid I would have to go back to school to learn Sanskrit, when to my delight I found English translations of the texts starting in the middle of the book. My night's rest was done for.

Ten sections dealt with uncannily topical themes such as pilot training, flight paths, the individual parts of flying machines, as well as clothing for pilots and passengers, and the food recommended for long flights.

There was much technical detail: the metals used, heat-absorbing metals and their melting point, the propulsion units and various types of flying machines.

If I had not known that I was looking at Sanskrit texts thousands of years old, I would have taken the book for a manual for trainee pilots. There was a check list with 32 instructions to pilots which the man in charge of an aircraft had to know before he could fly the machine. Among them were secrets such as how to 'jump' with the flying machine, how to fly in a zig-zag, how the pilot can see on all sides and hear distant noises. There were also instructions about the use of the machines in battle. How an enemy manoeuvre could be recognized in time, how to spot the direction of hostile attacks and then prevent them.

The information about the metals used in construction name three sorts, *somala, soundaalika* and *mourthwika.* If they were mixed in the right proportions, the result was 16 kinds of heat-absorbing metals with names like *ushnambhara, ushnapaa, raajaamlatrit*, etc., which I did not understand. And presumably the translators had not identified them either, or they would have been in English.

The texts also explained how to clean metals, the acids such as lemon or apple to be used and the correct mixture, the right oils to work with and the correct temperature for them.

Seven types of engine are described with the special functions for which they are suited and the altitudes at which they work best. The catalogue is not short of data about the size of the machines, which had storeys, nor of their suitability for various purposes. I recommend the texts mentioned here to those who doubt the existence of flying machines in antiquity. The mindless cry that there were no such things would have to fall silent in shame.

The book that came into my hands from the student by chance should be compulsory reading for aeronautical and aerospace engineers and constructors. Perhaps they will discover solutions to projects they are sweating over in the Sanskrit texts. Perhaps they will soon be able to take out patents! Copyright in technology so many thousands of years old no longer exists. But first of all our would-be-clever scientists must decide to take old texts for what they are—descriptions of what once were realities.

When I flew back to Srinagar, all I had seen of Calcutta was my hotel room, the museum, the university and streets teeming with people. But my publisher Ajitt Dutt was very happy.

We profited by our previous experiences and left Srinagar at about 4 a.m. At that time the caravans of pedestrians are still camping by the roadside. We drove 100 km, then the natives and the nocturnal sleepers, cows, camels, dogs and goats awoke and buses and lorries roared along, as rashly as tanks into battle. After the great awakening we only covered 40 km an hour and took a good eight hours for the 350 km to Jammu.

Jammu, capital of the state of Jammu-Kashmir, was once the winter residence of the north Indian maharajahs. Today officials from Srinagar winter in the pleasant climate at 403 m above sea level. It is difficult to pick out particular characteristics in Indian cities. They all overflow with people, they are all bogged down with unregulated traffic, they all have the same filth and they are all dominated by skinny cows.

On the level road leading to Amritsar we wanted to make up for lost time by pressing on fast in order to see the famous 'Golden Temple', the supreme sanctuary of the Sikhs, a religious community with 8 million adherents. Founded by gurus in the sixteenth century, the town also has the 'Pool of Immortality', the literal translations of Amritsar. How can a town bear the promise of immortality in its name? Something unfathomable must have happened here, for under the gold-clad dome of a building there is also a 'Throne of Immortality'. Today the religious guardians of the Sikhs reside under the dome.

At that moment our sturdy Range Rover proved that it was not immortal. There was a blowout in the left rear wheel. Just at high noon. The road was baking. No shadow, not a cloud in the sky. We burrowed under the mountain of luggage for a spare tyre; we wanted to get it over quickly. When I let the jack down, the newly changed wheel spread out alarmingly. We had forgotten to replace the air let out for the car's transport by air. The foot pump over which we sweated did not inflate the tyre; it must have been overworked at Karachi airport. Hell! At a pace a snail could have followed we crawled on to the next filling station. 'Do you have air?' I asked, but English is only understood by the upper classes.

At such moments one has recourse to a pantomime of signs, just like the first men. I demonstrated pumping movements, puffed out my cheeks and blew hissing air through my lips. No, he had no air, the attendant explained using comical gestures. Air is not normally provided at Indian service stations. Roasted by the sun, we dawdled on to Lahore. Night was already beginning to fall. In a workshop a nine-year-old boy inflated the tyre and repaired the damaged tube in a flash.

The road from Lahore to Sukkur via Multan was marked on the map by a red line, which meant that it should be asphalted. From Lahore to Multan the red line lived up to its promise, afterwards it was terrible. I asked a policeman the shortest way to Sukkur.

Asians are sympathetic. If they cannot wrap up a distressing piece of news in polite words, mourning crape descends over their features. What the policeman had to tell us tallied with his mournful expression. At a distance of only 32 km from Multan the Indus flows past the village of Muzaffargarh. Contrary to the seasonal norm, the heavens had opened their sluices; the weather had gone crazy. Although we had sunned ourselves in Srinagar, here the water was absolutely pouring down. Further south on the other side of the Indus it was already impossible to reach Mohenjo Daro. After the policeman, who spoke tolerable English, had consulted the locals, he advised us to drive further south via the dam of Alipur.

One can only accept the forces of nature humbly; it is no good getting angry about them. So we drove towards Alipur. The dam was already under water. The floods were washing over the bridges on the two arms of the Indus. However, we were advised to drive 320 km northwards where the dam near Dera Ismail Khan was still open. A gigantic detour, but what could we do?

For a long time the speedometer had shown more than the 320 km announced. The road became narrower and finally turned into a muddy country lane. There was no sign of the dam. In a nameless village we heard that the dam of Dera Ismail Khan, too, had been taken over by the Indus hours ago, so we had to make haste. All we had to do was go back southwards for 140 km where the Taunsa dam was still intact and open to traffic according to the latest news.

The Taunsa dam is a large structure with concrete carriageways. Tanks could roll over it, but unfortunately the builders had forgotten the access roads.

Six o'clock in the evening. We had been on the road for 16 hours and hoped that now it would be plain sailing all the way to Sukkur. Hope springs eternal in the human breast, but... After I had overtaken a mass of lorries and buses, we came to a river. The road ended somewhere in the mud. What was our cross-country car with four-wheel drive and a winch for? Now I wanted to find out what technology could do.

Willi got out, wearing knee-high wellingtons and waded ahead of the car like a sailor on a rolling deck through the bubbling yellow soup so that I could check the level of the water against his long legs. I drove after him at walking pace and felt slippery mud under the wheels. I prayed that the car would not stop. After minutes that seemed like hours, I was over the river. Eureka! I had found the other saving shore. What was it Archimedes discovered when he shouted Eureka? I think it was the law of specific gravity. If he had been here, he would have shouted Eureka two or three times.

Although it was night, we wanted to continue. We were stopped at the first crossroads and told that all roads to Sukkur were closed as the bridges were flooded. That news sapped all the energy from brain and body and we drove slowly to the haven of Dera Ghazi Khan. Near roadside fires people were selling fruit and vegetables by the light of oil lamps, but against all the rules of salesmanship they looked at us in a most unfriendly, almost hostile manner and were reluctant to give information.

A young man of untrustworthy appearance speaking mangled English recommended the Shezan hotel as the best in town. The Shezan was filthy and bug-ridden with an unappetising coffee bar and an interior courtyard with a water-pump that had not spouted a drop of water for years. A Pakistani who spoke English fluently and kept himself apart from the other men whispered that we ought to be careful. Many travellers had been robbed here and the authorities were powerless because the people stuck together like the Mafia. I asked to be allowed to park the Range Rover in the courtyard. Dog-tired and still in our filthy clothes we collapsed on to the dirty bedstead.

We awoke from an uneasy sleep. The rattle of chains and the sound of a voice came from the courtyard. By the light of their glaring carbide lamp we watched four men inspecting our car and obviously not because they were curious about Western technology.

We went down, stood with our backs to the wall, looking braver than we felt, and glared at the men challengingly. My flashlight formed a bulge in my lightweight jacket so that it looked as if I was ready to draw a revolver. Willi was next to me with his arms crossed, holding in his right hand a canister of teargas which we had brought with us on a prophetic impulse. Figures whom we had not seen before emerged from the darkness. They spoke to the four men, and pointed to the bulge under my jacket and to Willi's spray. The gang withdrew. We left immediately because we suspected that reinforcements would be coming. It was a short night.

It was not surprising that the road to Sukkur was impassable. The roads here are built in a primaeval way. Ox carts bring large stones which Pakistanis hammer into chips. At random they distribute the chips as a foundation, without

any binding material. Naturally the tar they pour over it in a thin stream does not stop the Indus from sweeping the surface away every year. Aid from developed countries could really be useful here if it provided instruction in road-making, but not with modern machines, for that would only put the poor locals out of work.

Christopher, the patron saint of travellers, withheld his blessing. We had our second puncture in the middle of the water. The brown Indus broth was up to the hubcap. As St Christopher blesses, but does not help, we plunged into the clinging mud with the jack. Why isn't there a button inside the car to set a hydraulic pump in motion? In every aircraft life jackets are inflated automatically after being connected to a valve. Why do jacks never raise the vehicle high enough? Why do car manufacturers imagine that punctures always happen on firm ground? As they only drive their cars on testing grounds, they have no idea that tyres can lose air anywhere. If I was a technician, I know how someone could have a guaranteed million-dollar business—even after the zip-fastener—by making a jack that could be used in every situation.

In Sukkur which we finally reached after taking many wrong turnings an officer in the Pakistani army told us that it was impossible to drive on southwards. The whole area was flooded and it would be weeks before the water subsided and the roads were repaired. Mohenjo Daro, the place of death, did not want us. We left the sinister inaccessible site to our left.

Tepe Yahya, the excavated site, the circular Sassanid city of Ardashir Khurrah and the caves near Kermanshah were still on our list of destinations. So on to Iran . . .

The officer who I asked if the road from Sukkur to Quetta and from there to Iran was passable looked at me uncomprehendingly.

'Where do you want to go?'

'To Iran.'

'Haven't you read the papers?'

I suddenly realised that I had not seen a newspaper since my arrival in Karachi. Our programme took up every moment of our time.

'Haven't you heard any news?'

The officer did not understand. How could foreigners listen to news in a language they did not know?

He said with military precision: 'All frontier posts with Iran are closed. A revolution has taken place. Follow me, please.'

We followed him to his simple office on the roadside. Having served under the British in the past, he still read *The Times*. He opened a drawer and handed us a bundle of old copies.

'There, have a look.'

DEMONSTRATIONS AGAINST THE SHAH IN SHIRAZ.
SHAH'S DEPARTURE FOLLOWED BY HEAVY CLASHES.
AYATOLLAH KHOMEINI ANNOUNCES HIS RETURN.
TROOPS OCCUPY TEHRAN AIRPORT.
SOLDIERS FIRE ON DEMONSTRATORS.
TRIUMPHAL WELCOME FOR KHOMEINI IN TEHRAN.
CIVIL WAR IN IRAN. CAPITAL IN THE HANDS OF THE REBELS.
ATTACK ON US EMBASSY.
REVOLUTION IN IRAN. ALL FRONTIERS CLOSED.

Headlines from *The Times*. The latest paper contained the information the office had given us and was dated 20 February.

After the forces of nature the superior forces of politics! We had to give up. So back to the port at Karachi which we knew only too well. Our baldhead grinned at us. He seemed to enjoy doing so.

'Do you know what we're missing?' asked Willi, after we had sat in stunned silence for hours.

I pondered. 'Luck!' I said.

'No, the four days after our arrival in Karachi and our three days' wasted driving in the rain.'

A week sooner and we should have been in Iran but we should have driven into the revolution which, so we read, showed all the signs of xenophobia.

'No,' I said, 'we were lucky really . . . and we will be back again.'

No longer in a hurry, owing to the forces beyond our control, we loaded our Range Rover on board a ship in the port of Karachi. With the help of our well-known baldhead everything went smoothly. At the end of April we received a letter in Switzerland. We could collect our car from the customs at Venice.

6 Twilight of the Gods

'Don't let your minds be cluttered up, with the prevailing doctrine.'

Alexander Fleming (1881–1955)
to his students.

It's a terrible thing. So many nice amiable people speak to me on my journeys, offering me—in this case at least—helpful hints and often their visiting cards. When I am back home again and sort out these souvenirs, I sometimes find that some of them are missing. I dislike this because I am an orderly person and like to drop people a line or two of thanks.

This time I hope that the man in his fifties wearing a dark blue suit who spoke to me in Chicago will read this book and know that I am grateful to him for putting me on an important trail.

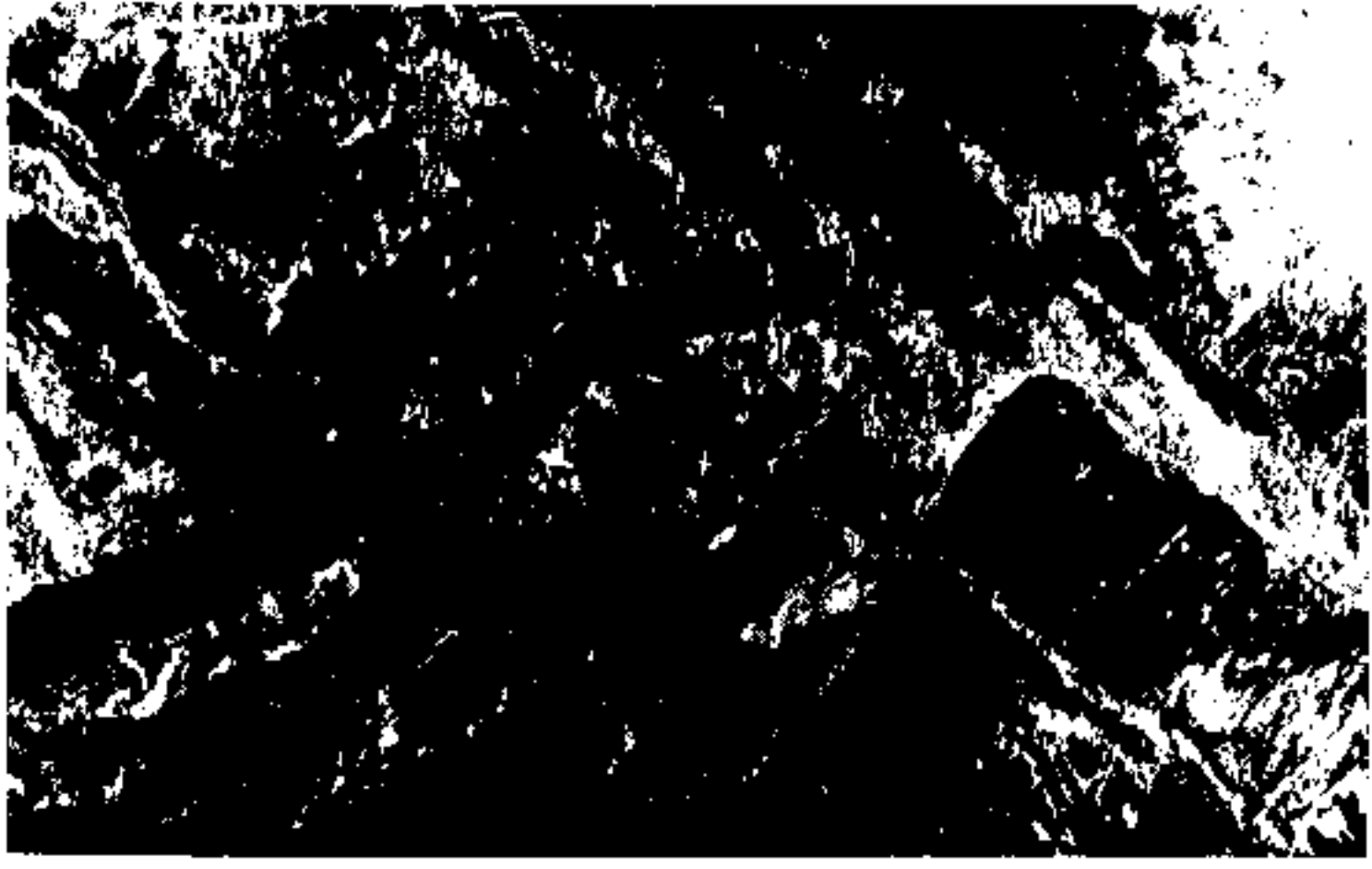
In the foyer of the hotel in which the Fifth World Congress of the Ancient Astronaut Society* took place in 1978, the man approached and gave me two aerial photographs, which he had taken from a copy of the *National Geographic Magazine* from the thirties. As the organ of the National Geographic Society, Washington DC, this magazine has appeared monthly since 1888.

I looked at the panorama of a hilly almost primaeval landscape, traversed by furrows. Presumably it was in some sort of foothill for the ground had scars scored by mountain streams full of pebbles and it also lay in a hot part of the earth, as was easy to see. The area had no vegetation, not a tree or a shrub. The photograph at once reminded me of the spurs of the South American cordilleras, the mountain chain in the west of South America which stretches to Tierra del Fuego.

'Do you know it?' asked the man, who was watching me closely.

'I've never seen it!' I answered.

* The Ancient Astronaut Society is a non-profit membership society which discusses my theories. The address of the English-language section is 1921 St John's Avenue, Highland Park, Illinois 60035, USA.



'What do you make of this trail?' he asked, pointing to the dark band which led over hill and dale. Naturally I could see the dark hatching which led over hills and gorges from the distant background of the picture to the foreground, standing out clearly from the natural slopes.

My Chicago well-wisher had another surprise. He pressed a second photo into my hand, an enlargement of part of the first. It showed the same trail, but hundreds of small holes were punched in it, as regularly as if a knobbly rolling-pin had been pressed into the ground. I took the normal width of mountain streams as a criterion and estimated the strip to be about 15 m wide. I was electrified by these aerial photos.

'What is it?' I asked my well-dressed friend.

'Gods have travelled along it in some kind of vehicle,' he answered, as if he knew all about it. 'Look. It must have been a fantastic vehicle. Can you think of a modern method of locomotion that would leave such marks in the rock or could travel at all at these heights? Just look how the trail goes up the mountains and down into the gorges. That is no product of modern . . .'

'Do you know where it is?'

The gentleman said that unfortunately he could not give the precise place; the photos were taken from a series about Peru, but the text accompanying the photos did not mention the locality. He left me with the two photos and disappeared with a 'God bless you' into the crowd of guests who turn the foyer of every American hotel into a railway station.

Back home in my study I thumbed through a hundred books on Peru, feeling sure at first that I would come across the sensational photos. But they did not appear. I found illustrations, taken from many angles, of the famous Inca wall which runs for 60 km, from the coast near Paramonga to the Peruvian mountains, flanked to left and right by 14 fortresses. The only feature the Inca wall had in common with the dark dark band in the two photos was the way they both crept over hills and valleys like prehistoric snakes.

This photo appeared in the well-known *National Geographic Magazine* in the thirties.

One thing I was not looking for was the Inca wall. But what could this dark band be? Was it rows of ancient graves? Or had a freak of nature caused this accurate and unusual pattern. Was it a sophisticated protective wall? Was it the remains of ancient plantations? The question nagged at me. I must go there, but where?

With its 1,285,216 sq km, Peru is very large, especially if one is looking for a relatively small area in impassable terrain. Letters flew from my Swiss retreat to my friends in Peru. Every letter contained copies of the two aerial photographs and asked the same question: Tell me where it is. For weeks the answers were depressing. I no longer wanted to open the letters. When I had almost given up, my secretary put an opened letter on my desk.

It came from Omar Chioini Carranza, a colonel in the air force. I knew that this friend of mine was recognised as a first-class aviator and amateur archaeologist. For some years, commissioned by the Air Ministry, he had been involved in the building of an Aviation Museum in Lima, the capital. Colonel Chioini had circulated my photos among his friends and Peruvian archaeologists. He wrote that one of the archaeologists knew the location of the pockmarked strip. It was in the north of Peru in the spurs of the Andes, north-east of the town of Trujillo, the centre of remains of ancient Indian cultures. I must come out. He would be glad to organise the journey to the region; all I had to do was advise him in advance of my date of arrival in Lima. I chose 15 August 1980 for the beginning of the expedition.

As I would be in the region I wanted first to visit El Baul, a small town in Guatemala to which my friend Dr Gene Phillips had drawn my attention. Extremely interesting and quite neglected statues of the gods are to be found there. It is only a step from Guatemala City to Lima by jet plane.

Sitting at my desk with my flight plan all worked out, I had no idea what awaited me in my search for the dark band in Peru.

Having learnt from experience, I tried to rent a cross-

I could not find the remarkable pockmarked band in any of the books about Peru. What was it? Who laid it out?

country vehicle in Guatemala City airport. Why car rental firms can only offer you flashy limousines suitable for good asphalt roads I fail to understand. In Central and South American countries cross-country vehicles are the only sensible means of locomotion, but there aren't any. The pretty Guatemalan girl at the desk asked where El Baul was.

'Near Likkin, which is close to San José on the Pacific Ocean,' I said, for I had done my homework.

The charming lady showed her toothpaste-ad teeth.

'You don't need a cross-country car there. The roads are in perfect condition.'

If a man with brown teeth had made such a promise, I would not have fallen for it. On the pretty lady's recommendation, I accepted a big American Dodge for 28 quetzal a day plus 11 cents a kilometre. The quetzal is the currency of the country and one quetzal is worth one US dollar.

Outside the city a four-lane motorway leads with a great many curves into the deeper lying region in the direction of Escuintla. Apparently my Guatemalan beauty had not been lying. It started like a tourist trip, but the joyride ended after only 20 km, outside Escuintla. Dripping jungle steamed on both sides of the road. Buses and lorries stuck close together and sent out sooty plumes of noxious exhaust gas. Overtaking was out of the question. As far as the eye could see there was a queue of stinking monsters crawling round the hairpin bends at a snail's pace. The only thing that impressed me about Escuintla, a miserable dump, were potholes as deep as wells. What must axles and shock-absorbers suffer under heavy loads? I should not have fallen for the smiling assurance that I did not need anything except the Dodge.

The road forked. The main road led westwards to the Mexican border, my route went south along the CA9 to San José. It was only partially asphalted and the Dodge creaked into and over potholes as deep as a bathtub and groaned over lumps of stone when they were too close together to drive round. On my right I was accompanied by a stream about two metres wide that would undoubtedly overflow the road if there was heavy rain. But it wasn't raining, at least not on that day.

The speedometer showed 49 km for the journey from

Escuintla to San José, covered in the record time of three hours! Oh that smile!

Shaken and jolted, with the five hours' difference in time still making themselves felt, I drove 10 km from San José to the modern holiday town of Likkin to have a good sleep. I wanted to be in peak condition for next day's drive to El Baul. The madonna of the airport was still smiling at me when I fell asleep.

A lot can happen overnight, both pleasant and unpleasant. When I pulled back the curtains in the morning, the sky was full of heavy clouds. Looking on the bright side, I thought that at least the sun would not turn the Dodge into an oven. In the jungle, clouds of this massive kind sometimes threaten without breaking. One can even escape them in a good cross-country vehicle.

I had just reached the route, when the heavens opened their sluices with a deluge of such proportions that they might have been trying to fill ten lines in the *Guinness Book of Records*. It was no first time for me; I have known heavy tropical rain before, but what happened on this 12 August exceeded all my previous experiences.

The stream that had been on my right the day before now grumbled on my left and rose menacingly until it overflowed the road, sweeping along uprooted trees, stones and small animals. Only suicides or greenhorns unused to the jungle would continue in these conditions. I stopped, took the tow-rope out of the boot, already up to my knees in water, and tied it round a massive mahogany tree.

During my disagreeable paddle in the yellowish-brown broth I saw the smile of the seductive Guatemalan like a mene tekel on the surface of the water. If only I had a cross-country car! Their axles are higher; they allow the water to flow unhindered between the wheels and the engine is better protected against water and dust. The brown soup frothed in front of the Dodge as if it were the bow of a ship. I took off my shoes and jeans, piling the luggage as high as possible on the rear seat and on the ledge under the rear window, for the stream had long since forced its way into the car.

I always take a NASA insulation cover, a present from Houston, with me for use in emergencies. Today I used it to wrap up the engine as best I could. It was unpleasant in the

roaring stream. It swept along the highly poisonous *barbamarilla*, a local snake. I disliked it intensely, but in spite of several encounters I came out unscathed. The Dodge pulled at the towrope like a bucking bronco.

I crouched on the roof and wondered fleetingly why I kept on exposing myself to such adventures. I sent heartfelt wishes to my wife and daughter in our beloved home in idyllic Switzerland.

After two hours the deluge ended as suddenly as it had started. Presumably the angels had emptied all the celestial swimming pools and switched on the sun again. Suffocating vapours rose over the jungle as if from a mediaeval washhouse. The birds twittered and crowed proudly as if they had closed the sluicegates.

A cowboy wearing a rig-out decorated with silver and a black sombrero rode up to my car as it lay at anchor to inform me that the banks of the stream had collapsed in many places and the road was damaged. He advised me to take care if I was driving on. That had already occurred to me without his horse-borne information service.

Three hours elapsed before the water subsided a little. The road was still under dark water that hid the potential dangers. I took the protective covering off the engine and got it to go after a few false starts, a bit of luck I tried to preserve by driving fast through the spray. The engine was ceaselessly baptised from below. My intention of getting away from the scene quickly and avoiding the swarms of mosquitoes which had simultaneously declared my body their feeding ground failed. A victim of the deluge, I pushed and pulled my car out of the mud, often with the help of farmers. Thirty-eight km beyond San José the level of the road rose above the bed of the stream. The gods had set me a severe test before the encounter with El Baul, for they knew that they have an attraction to offer that is worth a lot of trouble.

El Baul is a little hamlet a few kilometres from Santa Lucia Cotzumalguapa. You find its attraction in a wooden shelter with no sides and open to wind and weather, next to a sugarcane factory. The stone sculptures, my goal, were found by chance some years ago when the jungle was being cleared and then installed here.

Archaeologists have classified the star attraction as 'El

'Monument No. 27' is to be found under a wooden shelter in the village of El Baul.

Baul monument No. 27'. It has at least been given a catalogue number. Let us take a look at it.

'Monument No. 27' is a stele 2.54 m high and 1.47 m wide. The stone sculpture is dominated by a figure standing with arms akimbo, rather self-confidently it seemed to me. It wears what look like boxing gloves and the hands hold balls the size of tennis balls. On its feet the figure wears boots which reach to the knees and have trousers like knickerbockers tucked into them. A broad belt separates the trousers from the close-fitting upper part. To that extent the figure could be dressed in the fashion of its day, but the helmet enclosing its head is amazing. Like a modern diving suit, it ends on the shoulders in broad bulges. A tube leads from the back of the helmet to a small tank-like chest, a container. The helmet leaves a peephole free for the eyes protected as if with a transparent disc. Behind it you can make out an eye with an eyebrow, the beginning of a nose and part of the nose.

Now the stone object becomes even more remarkable. As

The 2.54 m tall figure, with arms akimbo, wears 'boxing gloves' and holds 'tennis balls'.

a direct extension of the nose, but outside the helmet, the stonemason has modelled an animal snout, possibly a jaguar's. The figure's breath emerges from the snarling jaws, as if it was being forced out. It has two bands round its neck, one of which ends on the breast in a small square chest, the other in a round object, perhaps an amulet.

This helmet wearer must have been somebody important, for a small figure crouches fearfully at his feet on the ground. It, too, wears boxing gloves and holds a tennis ball which it offers to the mighty one. To complete the relief, a broad rectangle at the foot of the stele contains six indefinable goblins. In the view of the archaeologists the relief is supposed to represent a scene from the traditional deadly dangerous Mayan ball game and the victor wears the mask of an ape, a jaguar or perhaps an opossum, for then the tube from helmet to tank would simply be the little creature's tail and the 'air' from the mouth would symbolise water. The opossum is an aquatic animal.

Which is the more fantastic, to make out an opossum on the stele or to see parts of a clearly recognisable technique? How blind must one have become by blinkered study to 'believe' that an opossum, ape or jaguar dips its tail over its shoulder into a container on its back?

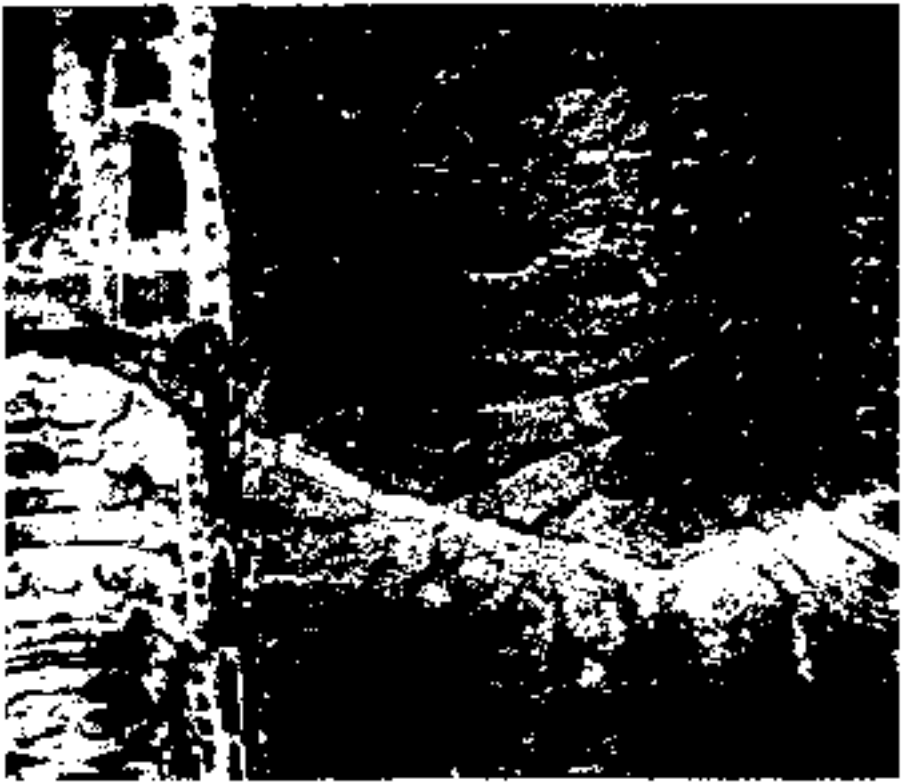
Unfortunately one cannot find the first bold 'discoverer' who explained the recognisable stylised breath as the symbol of water. He must have been smart, this interpreter of images, for his rumination was acclaimed and put in the textbooks and once something is in them, it is declared taboo by scholarly opinion. I did not find a single word explaining what the tank meant. An animal accessory? Scientific belief does not need an explanation. One has to believe. Basta: enough.

The idea of the Mayan ball game would be an attempt at an explanation, were it not for the properties which, apart from the balls, are unnecessary and even a hindrance in a ball game. Even the Maya would hardly play in trousers and boots, and tight-fitting overalls.

I agree with Sir Alexander Fleming and refuse to clutter up my brain with the prevailing dogma. My interpretation is as follows.

Two extraterrestrial beings, 'gods', had a fight; the vanquished god offers the victor his weapon and begs for mercy. Or, only the large figure represents a divinity and a kneeling ruler or priest is begging for the favour of the mighty alien. The dominating figure is the victor, who is dressed differently from the earthly one; he protects himself from bacteria and viruses on what to him is an alien planet with hermetically sealed clothing. Earth-born locals did not need this protection; they were immune to the native bacteria and causes of infectious diseases. That also explains the closed-circuit breathing apparatus. The alien draws filtered air into his helmet from the tank through a tube.

The Indians around El Baul still worship this stele as the representation of a great alien god. Until a few years ago they lit candles at the figure's feet. The Indians of Guatemala are Maya, descendants of those Maya who built the grandiose temples and pyramids. According to the ancient Maya beliefs matter had a soul, like the stele of El Baul, which contains *mana*.



A creature with an elephant's head on a human body greets us from a temple wall on Monte Alban in Mexico.

The animal-like snout outside the helmet is irritating. My critics will remind me loudly that extraterrestrials did not have animal muzzles and besides they would not carve sculptures and leave them behind.

For the umpteenth time I must state that no extraterrestrial had a hand in the work here! The stonemason who perpetuated a 'god' with helmet, overalls and technical accoutrements did not know what he was portraying. He saw this strange figure, this apparition from the cosmos. It impressed him and he portrayed it as he perceived it, in complete technical ignorance. I am convinced that all the ancient sculptors were led along this path. An aircraft becomes a bird, an excavator a fabulous animal, a laser beam lightning in the god's hand, a helmet an absurd-looking mask.

On a temple wall on Monte Alban in Mexico the visitor is greeted by a being with an elephant's head on a human body. Trousers flutter over the feet, which are shod, and its hands

are controlling some apparatus. I can safely assume that no man ever had an elephant's head around which a wreath of rays flickered.

Monte Alban, capital and religious centre of the Zapoteks, and its complexes were dated to 600–100 BC. How did the Zapoteks know about elephants at that time? Sacrosanct science says that they only existed in Africa or Asia. If I am told—and nothing is too silly to be advanced—that elephants and mammoths made their way to America via the Bering Straits 12,000 to 15,000 years ago, then Monte Alban must be dated synchronously to 12,000 BC. One cannot have it both ways—100BC *and* elephants! Take it easy. There were no elephants. As elephant reliefs are in fact exhibited on the walls at Monte Alban the stonemasons depicted something that was unknown to them.

Yet I have read, I swear it, that Egypt's Pharaoh Rameses III (1195–1164 BC) sent a fleet to Mexico and in that way elephant pictures arrived across the high seas. Good heavens! Rameses' elephants in Mexico! There are also archaeologists who are unable even to see elephants in the Central American depictions of trunks. They see an extinct species of bird.[2] Birds with trunks, that's not bad! These gentlemen should buy themselves spectacles!

I harbour the suspicion that the beings with trunks are neither elephants nor birds. In the Anthropological Museum of Mexico City I stood in front of a massive kneeling figure with a broad flat skull and eyes set wide apart. A trunk, which disappears into a strange swelling on the chest, protrudes from the middle of the skull. Anyone who defines this monster as an elephant must accept an extraterrestrial import. Elephants on our earth look quite different.

Between the pyramids at Tikal, in Guatemala, there is a large stone in the grass that has been exposed to the ravages of thousands of years. The once precise contours have been worn away by wind and weather. But if you take a close look, the outlines of a figure are still discernible. It, too, carried a tank on its back or chest. You can still make out a cog wheel from which a trunk, or more likely a tube, leads to the top of the torso. Strange?

It is said that the Maya did not possess the wheel. This unproved assumption results from the observation that no

carts are portrayed in Maya temples or on Maya steles. What an unceremonious method of misunderstanding and underrating peoples, cultures and civilisations! Contrary to scholastic opinion, I dare to suggest that there are no reliefs of carts or wagons to be found because their representation was forbidden.

My industrious friend Dr Gene Phillips photographed two perfect cog wheels perpetuated in stone in the Maya ruins at Copan, Honduras. Equidistant spokes lead from the hub to the rim, the exterior of which is marked with the broad teeth of a cog wheel.

As this truly sensational find can never be accepted as a cog wheel, I look forward gleefully to the evening when some terribly clever TV professor peers out of the long-suffering screen to tell us that it represents the teeth of the rain god, the stone teeth of the patron saint of maize farmers or a high priest's bundle of bootlaces. 'The frontiers between arrogance and ignorance are fluid,' said Alfred Polgar.

The restored ruins of Copan are a treasury of finds for anyone who keeps his eyes open. The Sunday archaeologist, Dr Gene Phillips, a lawyer from Chicago, has his eyes open, as befits his profession. Between the ruins of a temple wall, he spotted and photographed two busts which do not fit into any scenario, and therefore have not found the shelter of a museum. The busts, without abdomens, wear a broad bib which the wearer originally pulled over his head through the hole in the middle and let it hang down over his shoulders. A rectangle 50 cm long and 20 cm wide dangles from this bib. Once again there are the outlines of a chest. With bent arms and hands almost clenched, the timeworn figure is working some no longer existent levers which obviously lay at chest height.

Depictions of technology have been observed so frequently that we cannot dismiss them lightly. Often it is simply a question of what kind of technique was handed down in stone. Some 200 m from the busts, in a small museum in the middle of the ruins of Copan, stands a stone bust with a

This kneeling figure with the broad flat skull is housed in the Anthropological Museum of Mexico City. An elephant? Don't make me laugh!

These sculptures exhibiting two perfect cog wheels stand in the Maya ruins of Copan. Spokes run from the hub to the rim, the exterior of which clearly shows the teeth of the cog wheel.

perfectly preserved head, not as charming as the Venus de Milo, but lacking arms, like her. A kind of small concertina is suspended by braces; it has a porthole-like eye in the middle with two crosspieces inside it. Maya archaeologists say they are glyphs, i.e. characters. That does not solve the matter. One would be equally entitled to assume that the object was a morse lamp, of the kind used on ships, or even a small motor. In fact, the Austrian physicist Friedrich Egger, excited by this 'glyph', constructed a highly practical small rotary piston motor which was granted a patent. One really ought not to have one's eyes blinkered by dogmas.

I turned to some Indian boys who had been haunting me for a long time, gaping at my cameras and me, the stranger who had stood so long and so thoughtfully in front of the

A lump of stone crouches between pyramids in Tikal, Guatemala. In spite of heavy weathering there are signs of a cog wheel in the middle, with a tube-like connection leading from it. The stone itself shows its tremendous age.

Also in Copan! The bust, without the lower body, wears an apron which was pulled over the head. The bent fingers of the damaged figure are working some kind of apparatus.

mysterious stele. I asked them, 'What is that?' I pointed to the helmet and the tank.

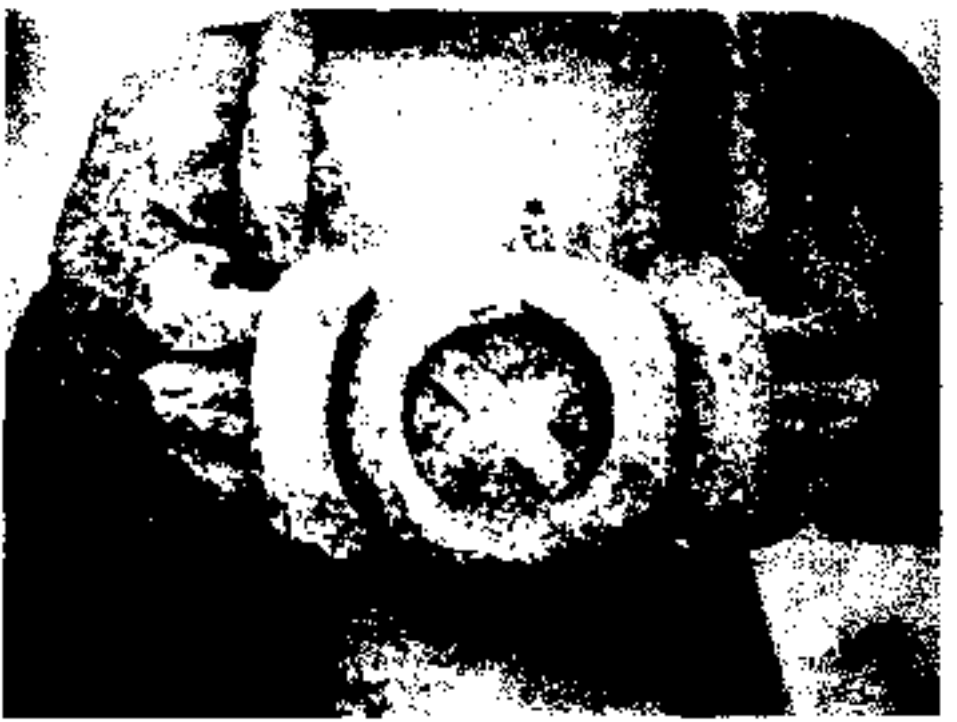
'*El astronauta!*' answered the oldest, as if it was the most natural explanation in the world. I smirked.

'And why does the astronaut wear boxing gloves and hold balls in his hands?'

'Can't you see that it is a god?' The lad looked at me in astonishment and his dark brown eyes grew even darker. 'It is a god and god is always *un misterio*!' Yes, the boy was right, he is a mystery.

I wished with all my heart that these children would preserve their artless way of looking at things, even when Western development agencies have the mistaken idea that they can make the Indians happier by studies at foreign universities or in high schools in their own country. They lose

This figure is in the small museum at Copan. It holds a remarkable object like a concertina, presumably a product of a past technology.



their identity as soon as they are taken out of their own mental world. They may bring the revolution, but the happiness of a simple existence is irrevocably destroyed.

As agreed, I sat in the hall of the Sheraton in Lima on 15 August waiting for Colonel Omar Chioini. He came through the swing doors punctually on the stroke of twelve as befitting an officer. Unchanged during the years I had known him, a gentleman of perhaps 60, with hair streaked with grey, a neatly trimmed moustache, heavy dark eyebrows and wrinkles caused by laughter round his eyes. As he stood before me in a dark-grey mohair suit, white shirt and dark blue tie, you would have taken him for a banker from Wall Street or the City of London rather than an air force officer.

Our greetings were hearty, with the obligatory South American backslapping and embracing, but thank heavens without the repugnant exchange of kisses which is the Kremlin men's ritual.

We sat at a marble-topped table and ordered the national drink, a pisco sour. Pisco is a grape spirit mainly distilled around the little town of Pisco on the Pacific coast. Lemon juice, sugar and white of egg are shaken in a cocktail shaker. A milky green drink becomes the preferred astringent end-product through the addition of a little Angostura bitters.

'Everything is ready,' said the colonel after we had exchanged some private news. 'A Land Rover will be ready at 6 a.m. tomorrow; if all goes well, you can be back in four days. My friend Frederico Falconi, an expert archaeologist, will accompany you. He knows *la muralla* very well . . .'

'*La muralla* means wall, doesn't it?' I realised there was a mistake; I sensed the great difference.

'Of course,' said Chioini. 'Naturally you want to see it.'

Although I was used to trouble, the error irritated me, but it did not get me down. Only too often I had had to explain in detail what I was interested in in foreign countries, even after the most careful travel preparations. Colonel and archaeologist assumed that I wanted to see the world-famous great wall of Peru. Take it easy, Erich, I say to myself quietly at moments like these. I took the two *National Geographic* photos from my Swissair travel bag and showed the dark band full of holes running up hill and down dale.

'*Amigo, that*'s what I want to see. I know the wall already.'

The colonel twirled his moustache for a second, bit his lips in confusion, apologised for the mistake and went to the telephone booth next to the reception desk. Shortly afterwards he returned with the message that he had cancelled the Land Rover and put off the archaeologist. He had also tried to get hold of the architect Carlos Milla, but had been told by his wife that Carlos was unavailable over the weekend and could not be phoned until Monday. The colonel said that Milla knew every archaeological oddity in Peru. He was friendly not only with official archaeologists, but also with the unofficial grave robbers and fences. If anyone could give me the information it was Carlos Milla.

I had not the slightest desire to wait in Lima. I knew the city with its important museums from earlier visits. I had been in the 350-year-old cathedral with its precious, carved choir stalls, considered to be the most beautiful in America. The building was consecrated in 1624 and Francisco Pizarro, the Spanish conqueror of Peru, laid the foundation stone. Numerous earthquakes and architectural taste changing with each reconstruction have made the cathedral into a calendar of art history, in which one can distinguish Gothic, Baroque and Classical elements. I admired the splendid houses from the colonial period with their spacious inside courtyards and their art treasures carved out of fine jungle woods or hammered and chiselled from iron. In the centre I know the Plaza de Armes where Francisco Pizarro drew the plan of the city on the ground with his sword in AD 1535. No, the busy city of 1½ million inhabitants would get on my nerves if I had nothing to do but wait. Colonel Chioini realised this and offered to drive me through the delightful countryside of his homeland.

'I'm going to fly to La Paz!' I said dryly.

'You know it as well as you know Lima. What do you want in La Paz?'

'I want to visit the ruins of Puma Punku,' I explained and could see from Chioini's face the Puma Punku might have been Timbuctoo as far as he was concerned.

'Aha,' was all he said. 'When shall we meet again?'

'In a week's time, I suggest, on the 22nd at the same time in the same place. OK?'

The colonel toasted me with the rest of his pisco sour.
'OK, Erich!'

The next norming I flew from Lima at 7.30 in a Lloyd Boliviana plane and landed in La Paz at 10.30.

Once again the wrangling over a cross-country vehicle began. Here, too, the rental firms can only offer small European cars or petrol-gobbling American limousines. They are all battered and have been repaired on countless occasions—wrecks that should be scrapped.

In Bolivia a car that works is an unattainable treasure, as rare as owning one's own house. If you see a gleaming car gliding silently past in La Paz, by far Bolivia's largest city with nearly 400,000 inhabitants, you can be sure that a diplomat from the capital Sucre is out sightseeing.

I chose a 1969 Volkswagen with 264,000 km on the speedometer, which had presumably been 'adjusted' several times. The dead straight unasphalted roads on the treeless plateau 4000 m above sea level were familiar to me from previous years. By Swiss standards you only have to go over a hill, but the Bolivians call it a mountain pass. My VW began to falter on the steepest stretch. In the thin oxygen-starved air the pistons shook in their cylinders and no longer transmitted the full force of their explosions to the driving shaft. A tried and true trick came to my aid. I made a U-turn and put the car into reverse. In this way my sturdy VW covered the few hundred metres to the top, but it was a fiendish bit of driving, constantly crowded from behind by fast buses covered in clouds of dust. On either side of the carriageway lurked packs of wild dogs, wolfish mongrels. The locals call them *los perdidos*, the lost ones. Half-starved and mangy, they would turn any animal-lover's stomach. The *perdidos* band together, hunting and uttering bloodcurdling howls; at night they are even dangerous to man.

The Indians of the plain are just as poor as the dogs. They

This relief, surrounded by railings, lies on a hill near Tiahuanaco. It is called the 'Writing Desk' in archaeological literature. 155 × 162 × 52 cm in stone—a strange writing desk!

Accurate rectangles, right-angled ledges and sharply demarcated mouldings imply a technical matrix which had a counterpart.

drive a few goats or sheep over long distances to poor grazing grounds, crouching by the roadside with glassy eyes. Here, as in the jam-packed buses on the streets of La Paz, they chew the leaves of the coca shrub, which is native to the Andes. Cocaine is the main alkaloid in the coca leaves, which taste bitter and temporarily numb the nerves of the tongue. The bushes with their delicate leaves and yellowish clusters of flowers are cultivated in plantations. The first travellers in the Andes related that chewing coca leaves gave the natives strength. But in fact medicine has discovered that eating, chewing, or sniffing large quantities of cocaine over a long period leads, via the central nervous system, to mental derangement after an original feeling of well-being. On sale abundantly at the lowest prices in the tiniest market, this narcotic enables the Indians to tolerate their apparently hopeless poverty. If you speak to one of them, he has to summon himself back to reality from his dream world before he can answer.

After two and a half hours I passed the little village of Tiahuanaco with its controversial ruins about which so much has been written, some of it by me. To the left of the main road a narrow lane leads south-east over the closed-down overgrown railway line from La Paz to Lake Titicaca. There stands a grass-covered hill surrounded by a wire fence. In specialist literature the little hill is described as a 'pyramid', although there is nothing pyramidal about it.

At the foot of the hill lies a monolith as if it had been hurled there by a giant. The Swiss travel-writer Johann Jakob von Tschudi[3] saw it in 1869 and wrote this:

> On the way to Puma Punka we found in a field a strange monolith 155 cm high by 162 cm wide; it is 52 cm thick at the base and 45 cm thick at the top. It has two rows of compartments. The lower row has two large compartments with two smaller rectangular ones one above the other in the middle, the upper row has four rectangular compartments separated from the lower one by simple mouldings. The monolith is known as *El Escritorio*, the Writing Desk.

The christening of this carefully dressed lump of andesite

was presumably undertaken by a scholar who was reminded of his own writing desk with its compartments and drawers. So far there is nothing in the literature to suggest what we are to make of this artistic work or what purpose it served. It was certainly not a writing desk.

There can be no doubt that it was made according to plan. Accurate rectangles of different sizes, with right-angled ledges terminating in a point, with sharply drawn mouldings and faultlessly carved gradations. This matrix had a companion piece with fitted into it firmly and exactly, to the millimetre, without joints. Such work is not carried out without a plan. But a plan means taking measurements and presupposes a knowledge of writing.

At the top of the hill you can see the mystery of the Andes, Puma Punku, a stone structure of incredible power, variety and precision. Its purpose has never been understood nor has it been adequately appraised in any *modern* work known to me. In the latest large general work about South America[4] Puma Punku is dismissed in these few lines:

> In the south-west corner of Tiahuanaco stands the great pyramid called Puma Punku. Two areas of different heights form its upper platform which is reached up several steps. A temple probably stood on one of the platforms, the entrance to which consisted of three portals executed in the style of the Gate of the Sun.

That is miserly, as if the Berlin Philharmonic were to play the 16 upward beats of the 'Eroica' to represent the whole work. Let us devote our full attention to Puma Punku!

The descendants of the Spanish conquerors brought the first news to the old world. In the middle of the sixteenth century Pedro de Cieca[5] described Puma Punku as a unique site with 'gigantic statues and a vast terrace. No one has seen the uncanny place other than in ruins.'

His fellow countryman Antonio de Castro y del Castillo, who was Bishop of La Paz in 1651, wrote:

> And although it was formerly assumed that the ruins were the work of the Inca, as a fortress for their wars, it has now been realised that they are structures from before the

> Flood . . . For if it had been a work of the Inca in a plain without water, and set so deeply into the ground, not even the Spaniards could have constructed such a wonderful building or one so beautiful. What I marvel at are those stones that fit one another so accurately . . .[6]

In the first half of the nineteenth century the French palaeontologist Alcide Charles Victor d'Orbigny (1802–57) travelled through South America. Describing Puma Punku,[7] he wrote about monumental gates which stood on horizontal stone platforms. He says that one of the complete platforms was 40 m long. Today there are no such connected slabs to be seen; they have collapsed, shattered and eaten by the teeth of time. But what remains is monumental enough to leave us awestruck.

As a 'collector' of ancient buildings it is hard to impress me, but Puma Punku, this grandiose panorama from another age, left me speechless. Massive lumps of granite, andesite and diorite, the grey-green plutonic rock of enormous hardness and resistance, lie about in a confusing chaos that still allows you to sense their original arrangement. The monoliths, which are simply astonishing, are dressed, cut and polished with such precision that they might have been delivered from a workshop with ultramodern machines, hard steel milling tools and drills. Extremely accurate grooves 6 mm wide and 12 mm deep run along diorite monoliths over 5 m long as if drawn by a ruler. The monsters were connected with their counterparts by mortises. Metal clamps united the stone monsters into a structure which eludes imaginative reconstruction today.

The Dresden archaeologist Max Uhle (1856–1944) is looked on as the 'father of Peruvian archaeology', indeed, he is called the 'second discoverer of Peru'.[8] At the Royal Zoological, Anthropological and Ethnological Museum Uhle

Puma Punku . . . the real mystery of the Andes! Your very first look makes you marvel at the force and precision of the dressed stones.

In 1651 the Bishop of La Paz wrote that the structure must have originated before the Flood. We must not contradict the venerable gentleman!

got to know the geologist and travelling scholar Alphons Stübel (1834–1904), who had already published a three-volume work about archaeological excavations in Peru. After some years of joint research Uhle and Stübel edited the standard work *Die Ruinenstätten von Tiahuanaco im Hochland des alten Peru*. It is 58 cm high, 38 cm wide, weighs 10 kg and contains detailed drawings of Puma Punka, and data that are accurate to the millimetre and have not been improved on to this day. The sketches accompanying my text are taken from the work published in Leipzig in 1892.

The two scholars were fascinated by Puma Punku. Faced with the incomprehensible complex, they decided to take accurate measurements and sketches of the layout home with them. It is conceivable that they were not driven merely by scientific zeal, but by the worry that otherwise their account of the mystery of the Andes would not be believed. The on-the-spot impressions were too powerful. Stübel noted:

> The most remarkable feature of the ruins of Puma Punku is formed by the still extant 'platforms' and the whole or broken blocks lying scattered between them which exhibit extraordinary diversity in their shape, size and workmanship. There are platform-like stones, symmetrically dressed lava stones, others with small gate-like excisions, stones with depressions like basins, stones with ornaments like crosses, with small niches and thick or quite thin embossed mouldings, as well as countless other shapes. With the exception of the three main platforms, which run in a straight line, the present state of the ruins is extremely disordered. The three so-called main platforms run in a north–south direction. They cover an area 43 m long and some 7 m wide.[9]

Max Uhle had to stand by and watch a unit of the Bolivian

In the first half of the nineteenth century the archaeologist d'Orbigny reckoned that the stone platforms still had a total length of 40 m. They are shattered today . . .

. . . but even a photo taken in 1980 makes us puzzle over the tremendous power of the stone masses and the wonderful work done by the stonemasons.

army organise practise shoots at the statues. If the builders of Puma Punku had not planned their complex for eternity, only a mass of rubble or not even that would have been left.

Puma Punku means Gate of the Lion. Today there is no sign of a gate, for the Spaniards and after them the Indians broke up many of the stones and took away whatever they could carry or drag. But even if Spaniards, Indians and the whole Bolivian army had combined in a communal robbery, they could not have altered the position of the gigantic dressed platforms. Could it be done today?

In 1964, for example, Abu Simbel was sawn into sections, numbered and put together again 60 m above its former site close to the Nile, using the massed technology of Western industry. Nothing of that kind has been attempted at Puma Punku. So far, we still do not know how deep the andesite and diorite blocks and platforms stick into the ground. So far excavators have not been able to lift the biggest blocks, thank heavens. If they were transportable, they would be exploded and disappear as cheap long-lasting building material in the walls of pompous office blocks or stores, or at best reconstructed by diligent archaeologists in the very places where they do not belong. Nevertheless, the terrain, as Siegfried Huber[10] writes, gives one the impression of a busy building site:

> The area gives one the impression of a stonemason's workplace; the masters and apprentices have just left for their teabreak to return immediately to work with hammer and chisel. A vast mount of skilfully dressed and polished material, platforms, blocks, millstones, fragments of friezes, stone seats and doors seem to be waiting for transport.

If you see what is anchored in the ground at Puma Punku, the method of transport to and from the sites remains a mystery. Alcide d'Orbigny relates that he saw the main platforms, now divided into three, still in one piece over 40 m long. A block of stone 40 m long and 7 m wide buried to an unknown depth has the volume of an eleven-storey house. The raw mass must have been much more voluminous, because it had to be

fashioned and dressed first. In places where stone is worked, chips are left behind. There is no stone debris at Puma Punku.

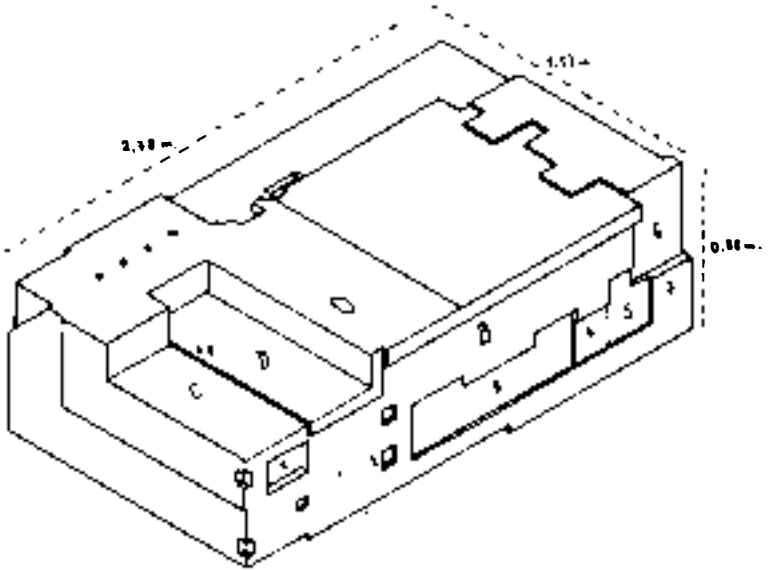
To sum up: the stone masses weighing many thousand tons must have been transported over the treeless plateau by human muscular strength in the absence of modern lorries and cranes. Anyone who says lightheartedly that it was all feasible should remember that one thousand tons equals one million kilograms and that many thousand tons were moved at Puma Punku! Were the celebrated wooden rollers pushed under these stone monsters as well? Only people who talk about colour like blind men could risk that theory. Wooden rollers would have been crushed and split. If transport columns had managed to get the burden from some site to the slopes and just one tropical rainstorm had fallen, the stones would have vanished like raisins in a cake, sunk in the morass. The transport was effected somehow, otherwise there would be no stone platforms and monoliths at Puma Punku. How? This is the mystery without a convincing solution.

The precision of the works is as mysterious as their transport.

Example 1:

We have a rectangular block 2.78 m long and 1.57 m wide, with an average height of 88 cm. The block has six main surfaces: top, bottom and four sides. The six surfaces are divided into small and large surfaces, with each surface on a different plane. To explain: on the lateral surface **B** surfaces (1) to (7) are 1 cm higher or deeper than their neighbour. Surfaces (6) and (7) are separated by a ledge of 5 cm that narrows to a cornice 4 cm thick. The narrow moulding (8) running dead straight between surfaces C and D is only 2 cm wide. The block is wedge-shaped. The rear part (in Figure 1) is thicker than the front.

Nowadays such precision work—if there was a stonemason to take it on—would be executed with the help of milling tools and high-speed drills cooled by air, water or artificial ice. The work was made particularly difficult because it had to be carried out on diorite, a stone as hard as granite. The prize question: what tools did the Puma Punku stonemason use?

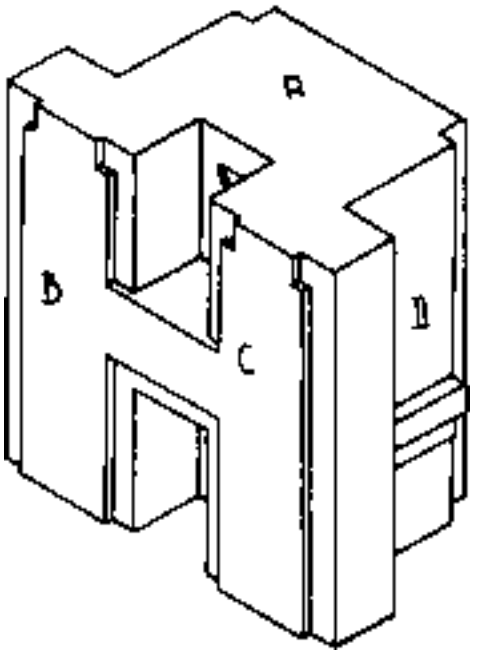


There is no better survey of Puma Punku than the book by Uhle and Stübel. This sketch to accompany Example 1 shows the brilliant construction in detail.

Example 2:

The block consists of andesite lava; it is 1 m high and 1 m wide at its broadest point. I have marked the main visible surfaces A, B, C and D. Between the surfaces B and C two niches have been cut out, one above the other, and small rectangles, 8 mm deep have been cut into their rear walls. These small depressions are reminiscent of a carbine breech which fitted into its counterpart.

Easier said than done. Apart from the two elements fitting into each other, an apparatus was necessary to allow them to fit without the stone mouldings splintering during opening or closing. Wooden rollers or the arm of a lever would not have been adequate to allow blocks weighing tons to slam to like safe doors. The process presumably took place on the heights, not after the blocks were lying on the ground. Given the complicated difference in height between the various planes, with rectangles, squares, ledges and mouldings, it was not enough to lower the block on ropes from a wooden appliance into the piece lying on the ground. Rotatory move-



This architect's drawing shows the articulation of a block of andesite lava.

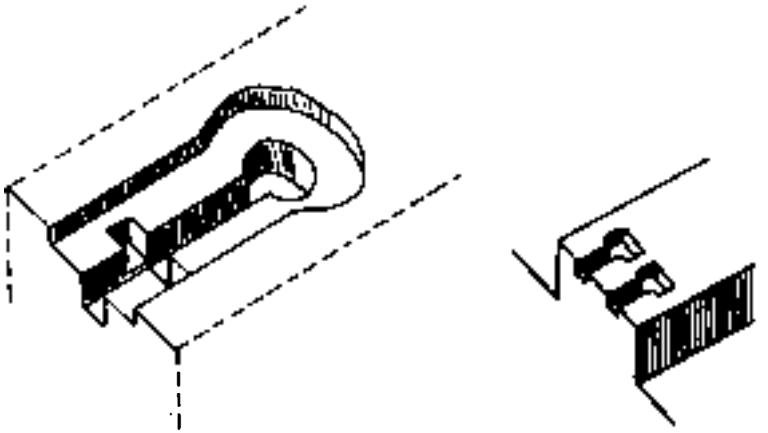
ments would be needed so that blocks of this size could be led into the spaces. Nowadays pre-cast concrete elements are less complicated and comparatively more primitive than the handicraft technique used at Puma Punku. If that is what it was . . .

Example 3:

A diorite block rises 1.1 m high from the yellowish-brown ground, surprisingly enough barely touched by the ravages of the millennia. A groove 3 mm wide and 2.5 mm deep runs from the front of the blocks 8.5 cm before the polished surface. Tiny holes 1.5 mm deep have been drilled in it 4 cm apart, as if made with a diamond drill. Such precision could not have been achieved with stone or wooden tools, or a drill of the hardest animal bone.

Example 4:

A large rectangle with a depth of 2.5 mm is let into an andesite block measuring 7.81 m by 5.07 m. There was no



These small excisions on the rear side of the stone are reminiscent of the very latest carbine breech.

botched work here, no damaged places smeared over with mortar or cement. It is a masterpiece of the stonemason's art. This indentation also exhibits the openings used to fit the platforms together.

Example 5:

The builders of Puma Punku were not only familiar with rectangular work, they also knew the straight edge and the circle. I saw and photographed circles 26 cm in diameter cut out of the stone.

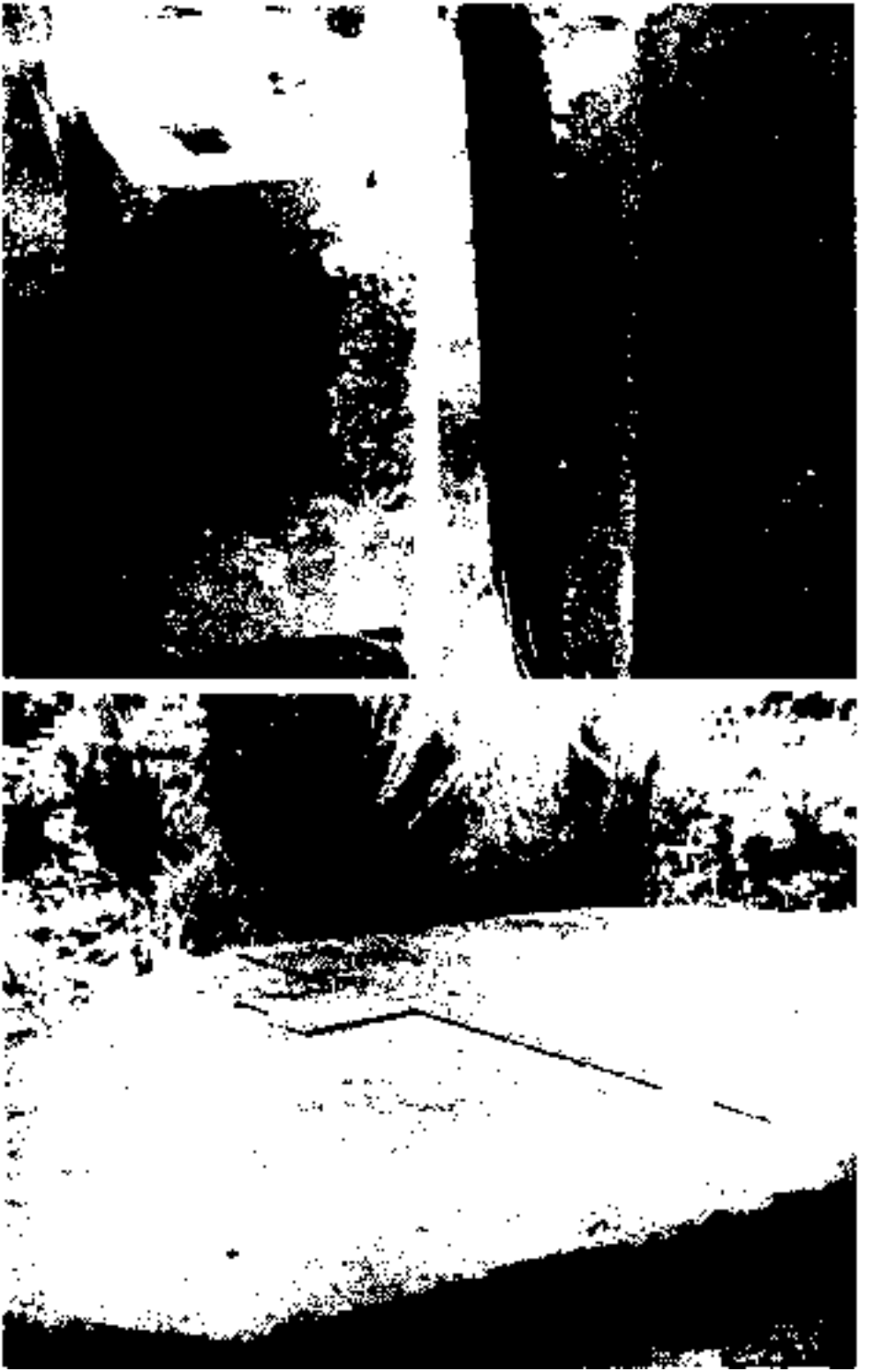
I look on Puma Punku as proof of some of my most important claims in connection with the buildings of antiquity.

The Aymara, a pre-Inca tribe who are supposed to have worked here on the plateau, could not have been responsible, for the technique employed goes far beyond the knowledge and abilities attributed to pre-Inca tribes.

This work was carried out according to a plan. The overall planning was based on geometrical measurements.

Barely touched by the teeth of the millennia, this 1.1 m high diorite block stands in the yellowish-brown earth. A groove only millimetres deep with small holes in it every 4 cm runs down its outer face.

A large rectangle is sunk 2.5 cm into this andesite block measuring 7.81 × 5.07 m.



The execution of details testifies to an advanced technology.

As regards the transport of the stone masses, the builders must have known their weights and taken stability and hardness of the material into account.

Planning on this scale implies knowledge of *writing*. There were so many positions to be considered, calculated and fixed that even the cranky 'memory culture' of Stonehenge does not get us any further.

The possibility that a genius, a once-in-a-millennium architect, flexed his muscles here can be excluded. Given so many building sites with the attendant transport, stone dressing, instructions to the masons, etc., even a genius would have crumbled, quite apart from the fact that, if done by human powers, the topping-out ceremony could not have been celebrated in one man's lifetime, or even in several generations.

Result:

As planning is obvious, we must credit the builders with knowledge of writing. But, and there the archaeologists and ethnologists are wonderfully unanimous, the Aymara had no writing. Which means their exclusion as the builders!

There can be no building plan without detailed drawings. They existed at Puma Punku. Even the archaeologists speak of 'copper clamps' with which the blocks were supposed to have been held together. Copper is a weak material. It is only 3 on the Mohs scale of hardness, as opposed to iron with 4.5. Copper could not chain together slabs weighing tons. Johann Jakob Tschudi[4] already had something to say about this:

> Even more astonishing than the transport of these enormous masses of stone is the perfect technical execution of the stonemason's work, especially when we think that the ancient Indian artisans had no iron tools and that the alloys of copper and tin known to them were much too weak to dress granite successfully. It is still a puzzle how

Archaeologists say that the blocks were held together with copper clamps. Copper is far too weak a metal for these stone masses!

Knowing that the ancient Indian craftsmen had no heavy iron tools, the traveller Tschudi was amazed by the transport and dressing of the colossi.

they managed it, but the most feasible view is that the final polishing of the stone was effected with fine stone dust or plants containing silica.

Tschudi's astonishment reveals that already in the last century there was a desperate search for a plausible solution to the Puma Punku mystery. The final polishing of the outer surfaces might have been possible using stone dust and plants containing silica, but they could not have been used to scour grooves millimetres wide and squares with accurate right-angles in hard stone!

Today we know that the granite found at Puma Punku was formerly quarried at Cerro de Skapia near Zepita in present-day Peru, a good 60 km from the complex. Sixty kilometres is no distance. Not on level carefully maintained roads, but here it is a seemingly endless route leading over mountains and rivers.

The formula is simple.

Planning + arithmetic + geometry + transport + hard

Puma Punku, 1980! One gets the impression that the confusion was caused by an earthquake or an explosion. A subject for touristsl

metal tools = a technology that was presumably beyond the men of those days.

Indian tradition says that Puma Punku 'was built by the gods in a single long night'.[11] No men had a hand in it and the gods, who could fly, destroyed their own work by lifting it into the air, turning it over and letting it fall.

Today it still looks as it might have done after such an act of violence. Can we not take the simple mythological tradition seriously? Why should we be ashamed to admit that in the rarefied air of this grandiose 4000 m high landscape there is a magnificent achievement which we cannot explain?

'What is man? Certainly not what he takes himself for—the crown of creation!' wrote the poet Wilhelm Raabe (1831–1910).

For three days I plodded through the ruins, measuring individual items, photographing and dictating keywords into my pocket machine. Twice daily, around 11 a.m. and 2 p.m., a Crillon Tours bus deposited some 50 camera-draped tour-

'You must stop measuring at once!' an Indian shouted. Why?

ists on the site. They included many Americans. Some of them whispered to each other. Then they recognised me and asked me to pose in a group photograph or give them my autograph. On the last day the two o'clock bus had just off-loaded its passengers at the village church of Tiahuanaco, when two sour-looking Indians appeared in dark-green ponchos, their *chullos*, and woollen peaked caps pulled down over their ears.

'Stop measuring at once!' one Indian ordered.

'Why, señores?' I asked.

'Foreigners are forbidden to undertake excavations without written permission from the University of La Paz.'

I could understand that. For a moment I thought of telling them that the Universidad Boliviana, General José Ballivian, Trinidad, had conferred an honorary doctorate on me on 12 February 1975, but I let it go. At the time, when I heard the news, I was suspicious of this honour. Honorary doctorates are often conferred when endowments have been made and I had not given the university a penny. Not until the Bolivian Ministry of Education, the Ministry of Foreign Affairs and the German Embassy confirmed that it was genuine did I thank them for the honour. This was the first time I could

put it to good use, but I did not. I was pleased by the Indians' vigilance. Where should we be if every tourist or Sunday archaeologist was to put a souvenir in his rucksack? I said, 'You're right, but I'm not digging. I'm not touching anything; I'm only taking a few measurements. Is that allowed?'

'No, Señor von Däniken. We have been ordered to stop your activities.'

So they were addressing me by name? Who knew me in this desolate landscape? I had not given interviews to any papers. Who knew that I was here? They confiscated my tape-measure and would not let me out of their sight, but I was allowed to take photographs. Who disliked me tackling Puma Punku? Was someone afraid of the fresh streams of visitors who would be drawn there by my report, as actually happened at Tiahuanaco?

In the evening, in the bar on the 25th storey of the Sheraton skyscraper in La Paz, I was chatting with a young married couple from Munich over a drink. She was studying ethnology, he was a qualified lawyer. They had crossed Lake Titicaca by hydroplane from Peru. They had both read my books and both were disappointed by what they had seen during the day. They queried my descriptions. The lady said to me, 'We saw the ruins of Sacsayhuaman above Cuzco, but with the best will in the world we could not find anything extraterrestrial of the kind you describe.'

The lawyer added drily: 'The guidebook explains how the stones were dressed. You can still see the same sort of dressed stones in the streets of Cuzco today!'

The same old song, the eternal error! Even the crew who shot my film *Memories of the Future* at Sacsayhuaman did not find the ruins *I* describe, for they did not bother to. Even when I look at the masses of enticing holiday cruises to South America I can imagine some of the participants knowing my books and being disappointed, like the couple from Munich. Apropos of the boom in cruises to South America, I shall describe the route that leads to *my* ruins.

'Ladies and gentlemen, in the morning—it doesn't have to be at the crack of dawn—take a taxi to the ruins of Sacsayhuaman. Get the driver to drive another 1.5 km up the mountain on the old road to Pisac and stop just before the first left-hand curve. Pay off the driver, even if he screams

Above the fortress of Sacsayhuaman lies a labyrinth of rocks that does not merit the term 'ruins' in the normal sense.

and gesticulates. He will try to persuade you that he will wait for you. That only means extra expense.

'Now look down the mountain in the direction of the Inca fortress. Climb the small height with fissured rocks that lies 200 m above you to your right, just next to the roadside. You reach a labyrinth of rocks that does not merit the description "ruins" in the ordinary sense. Indefinable masses of stone lie about, large and small stone blocks, the unrecognisable remnants of some historic buildings. You soon get the impression that at some time a structure built with the latest technological refinement was totally destroyed here.

'Via clefts and grottoes you clamber to the platforms. Astonishingly and unexpectedly you stand before beautifully cut stone monsters. Ladies and gentlemen, take a good look at these polished concrete walls that look as if they had been taken out of their wooden mould only yesterday. You are wrong! It's not concrete, but granite!

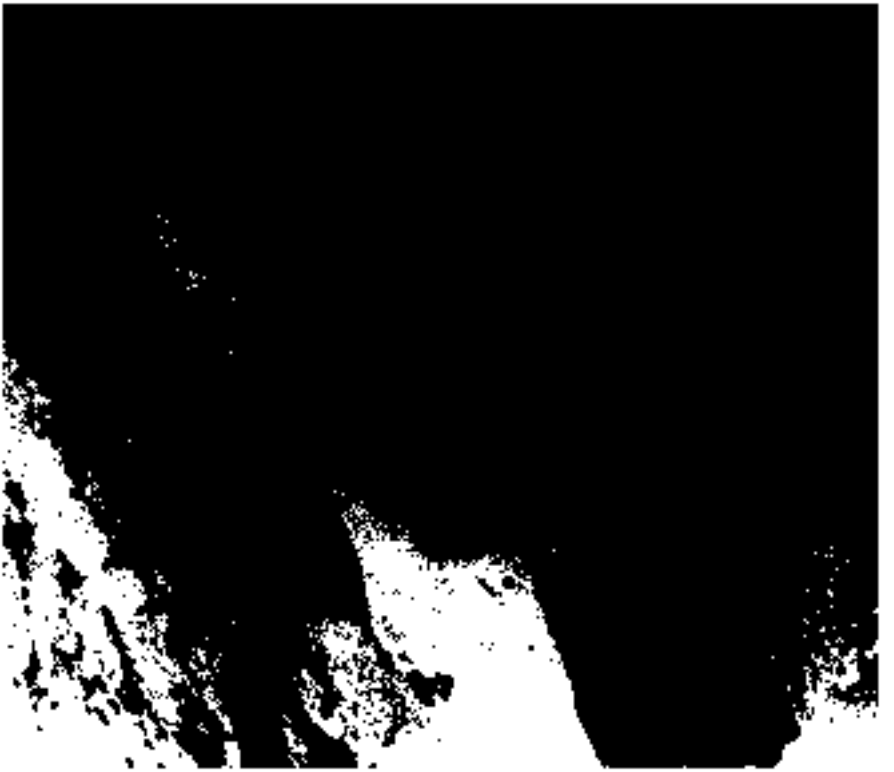
'If you have lost the ability to be amazed, that important

Strange rock formations can be found on the mountainsides to the left of the road.

faculty will easily return to you here. Grottoes stand on their heads as if shaken by some primaeval force, tunnel entrances are telescoped and their formerly straight courses interrupted. Look closely; nothing has been put together with mortar or some other binding agent, there is no trace of depressions for metal clamps of the kind to be found at Puma Punku. No, up here, above the fortress of Sacsayhuaman, the tourist goal, everything seems to have come "from one casting". Edges are right-angled, fresh surprises await you behind every colossus.

'If you have already gone on the tourist excursion to the Inca fortress, you will note that the real sensation of Cuzco, the genuine prehistoric mystery, lies up here, behind and above the mountainsides of Sacsayhuaman. Seldom visited. And more or less ignored.

'Keep your eyes open! These stone masses are only one mosaic stone in an inexplicable jigsaw puzzle. Discover the large and small cliff formations on the mountainsides to the left of the road. No one disturbs or warns you here, so march confidently over the rough meadows and dry fields, climb

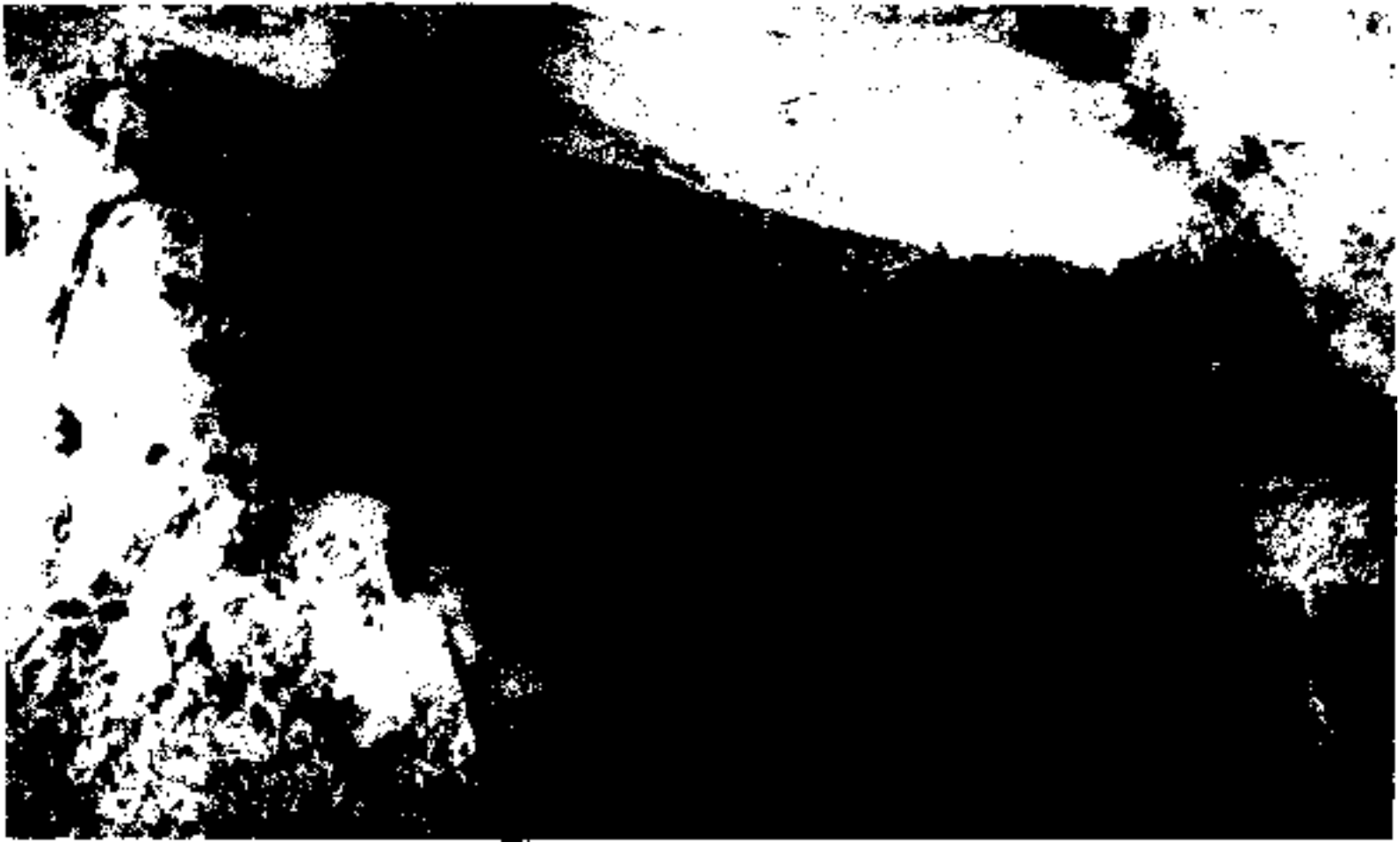


Angled edges, cave-like depressions, stone wedges—as if made of wax.

fearlessly over the fences. No Indian farmer has ever stopped me. They are all polite and if necessary a couple of soles (the local currency) works wonders.

'After a couple of hours spent wandering in the past, you will realise that nearly all the cliffs have been dressed. No itinerant archaeological priest will be able to convince you that mother nature conjured up the right-angled edges in the cliff, with their surfaces so carefully polished, set the gigantic "stone seats" in the landscape just for fun, hammered the stone showcases, created the steps which run from ceiling to floor. The fact that they are standing "on their heads" is the final proof that the gigantic labyrinth was once violently shaken and rotated on its axis. No one can use the steps as they exist today. If we turn them over, they provide a first class ascent to the "dress-circle" and even higher.

Steps run from the floor to the ceiling—proof that everything here was turned upside down at some time.



Rock faces bow toward each other; clean-cut angles run along the mouldings.

'A look behind the scenes at the Inca fortress! Turn your backs on the much-photographed walls. At the same height lie monolithic rocks which have been dressed and have no conceivable purpose. As you see them today they make no sense. You will see nothing, absolutely nothing, that can be fitted into an acceptable scenario. No arrangement, no walls fitted together, no piled-up monoliths. Blank rock faces bow to each other, clear-cut surfaces end in topsy-turvy steps leading to the ceiling.

'Once you have seen all that and taken another look at my descriptions and photographs when you get home, you will be glad you did not simply take the well-trodden tourist path!'

I will quickly run over what you cannot find in my books on your return home.

The relevant literature asserts that the rock called Lacco or Kenko Grande with its niches, chambers and tunnel entrances was a holy place, the niches being thrones of the dead, and that everything belonged to the magical kingdom of the

underworld. It is brazenly asserted that the order (disorder!) to be seen today was presented by the builders in the same form.

Garcilaso de la Vega[11] remarked as early as 1720 that the stone field today known as Chingana Grande, the Great Labyrinth, was dragged towards Sacsayhuaman by 20,000 workers, but got out of hand and in falling buried 3000 men. Today archaeologists[12] take a different view: 'The stone was never meant for Sacsayhuaman. Indeed it was never transported, it was always lain where it now lies.'

Scholars make the builders into fools, imagining them to be so stupid or mad as to have cut steps in the rock that run from top to bottom, steps that could never have been used at any period. According to this curious interpretation, they cut out niches with sloping surfaces on which no one could even lay a bouquet of flowers in honour of the gods of the underworld, not to mention a statue in honour of the holy place. The poor fools laboriously polished surfaces and hollowed out depressions that were completely useless.

For those who miss the boat to South America and so cannot check my descriptions, I present three photographs which were taken in the summer of 1980 a few hundred metres from the Inca fortress. For those who are going to visit Sacsayhuaman, I shall resume my role of guide.

'Ladies and gentlemen, please stand by the right-hand third of the fortress wall facing the fortress. Immediately behind you there are clefts in the ground. Climb down into them, there is no danger. You are transported into an extremely mysterious rocky landscape. In front of you lie stone monuments 3.5 m high, with overhanging cornices. Just at the corner you will find broad stepped bands perfectly cut out of the rock. The rock leans slightly forwards; in some places it touches the opposite walls. Please look closely. It is not a composite structure. It is one solid mass of rock. The rough undressed natural rock only begins above the dressed surfaces. The dressed stones could never have served any purpose in the form you see them now. Linger a while in the chamber of mysteries. I wager that you will soon realise that the dressed stones once stood further up the mountain and fell into their present chaotic positions owing to a natural event, say an earthquake, or deliberately owing to an explosion.'

The whole leads to the same conclusion as at Puma Punku. The verifiable technology used up here above the Inca fortress was more advanced, more titanic and more grandiose than that with which the cyclopean Inca walls of Sacsayhuaman were constructed. Since the Inca walls existed when the Spaniards conquered the country and nothing has been added since, the dressed rocks to which I constantly refer are older than the Inca fortress. As at Puma Punku, there must have been planning, ergo some kind of writing was known. The monumental structure was bigger than anything the Inca and their forefathers were in a position to build.

Where the same master builders at work here as at Puma Punku? Need I mention that here, too, mythology relates that the gods destroyed their work themselves, once they recognised the ingratitude of the men they had created?

After I had explained their mistake, the married couple from Munich promised to visit Cuzco again. While I was writing this chapter, a postcard arrived with greetings and thanks and comment, 'That was never the work of simple Indians! Why doesn't someone speak about it?'

I do speak about it. Continually. As I do here. Recommended for checking.

My conversation with Colonel Chioini and the architect Carlos Milla began in Lima on 22 August, the Friday agreed on, with an unpleasant bit of horse-trading. Milla was a polite man; he spoke only when spoken to. He had rough hands which indicated that he was prepared to roll up his sleeves and help his workers, if necessary.

'You know what I'm looking for,' I began without preliminaries. 'Please show me on the map where I can find the pockmarked bands.'

Carlos Milla was taken aback by my blunt question.

'Si si, señor, I know to a metre where it is, I can draw it in on a Peruvian cadastral map.'

'Please do so,' I urged him.

The architect closed his eyes, opened them and looked for

These are three photos of the same rock complex, a few hundred metres from the tourist attraction. Taken in 1980. Here one learns how to wonder again; one senses the mystery of the remote past on our earth.

help from the colonel who was nervously drumming on the marble-topped table. He was obviously embarrassed and said in English, 'I believe he wants money.'

The expedition was not going to founder because of that. I have long since been used to paying for information. As discreetly as possible—I still don't enjoy bribery—I pushed a green fifty-dollar bill up to his glass of pisco sour.

'Please, where is it?'

Carlos Milla disregarded the money. He wanted more. He said that he had incurred expenses in obtaining the information and in addition he was prepared to accompany us for what it cost him to leave his practice.

'What will it cost?' I asked.

'Six hundred dollars for three days, plus 225 dollars for the Land Rover which I'll provide!' said the architect who was obviously not bashful about figures. I hate being done, besides it occurred to me that this businesslike character might suddenly ask for extra cash on the journey. Given the information that the mysterious band with the holes existed, we would have to find it without Carlos Milla.

'You needn't come with us. I'll pay you 200 dollars!'

I looked at him expectantly and slowly put the documents on the table into my briefcase. I wanted him to know that it was my final offer. Colonel Chioini spoke firmly to his acquaintance, he found the bargaining as painful as I did. Carlos Milla closed his eyes again, a good trick to puzzle the potential buyer, and opened them when he realised that 200 dollars cash was better than nothing.

In a hurt voice he explained, 'Your band with the holes in extends much further over mountains and valleys than the old *National Geographic* photos show. The most suitable spot for you is 2 km past the village of Humay in the Pisco valley. Drive to the Hacienda Montesierpe. Behind the hacienda there is a strip of cultivated land 300 m wide. Immediately above it on the barren hills you can see your strip with the holes.'

If correct, it was a useful piece of information. On the map the Pisco valley runs at right-angles to the Panamericana, one of the dream roads of the world. I paid over the 200 dollars and promised Carlos Milla future business if I wanted to track down other mysterious places in Peru. If anyone is

interested, the address of the topographical expert is: Architect Carlos Milla, Avenida Salaverry 674, Lima.

Immediately after the conversation, I telephoned my acquaintance, Professor Dr Janvier Cabrera, in Ica, which is only 70 km from Pisco. Perhaps he knew the Hacienda Montesierpe, perhaps he would like to come with us. Cabrera, an unorthodox anthropologist, agreed on the spot. We arranged to meet the next day at 1700 hours in the Museum of Ica.

The journey in a rented Datsun took a good four hours. For 40 km outside Lima the Panamericana is built like a genuine motorway, then it narrows to a single lane which runs along the coast, but mostly through desert. Although the coastal strip down to Pisco on the Pacific lies in a geographical zone which allows luxuriant vegetation to flourish in other parts, that is not the case here. The cold water of the Humboldt current cools the hot atmosphere heated by the sun so that one must count on fog both morning and evening. But because the fog is dried out in higher, hot layers of air, there are hardly any precipitations. Long stretches of the dream road show the result. You see dunes, fields covered with pebbles and the uprooted trunks of plants like thistles drying out on the sand of the desert. The locals form them into letters on hillsides, like gigantic advertising slogans.

The scenery changes abruptly: luxuriant valleys with cotton fields and fruit—and sugar-cane plantations on both sides of the road. By the roadside Indians sell fruit, vegetables and of course pisco, their favourite spirit, and wine in fat-bellied bottles. No sooner are you used to seeing such cases of fertility, when there is a harsh cut in the landscape film, and it continues with the absolute desolation of the desert, the whole region a kaleidoscope of sea, mist, uninhabited desert and strips of fertile land.

Buses dash along at excessive speeds carrying tourists to Nazca. The tourists doze, thanks to the indispensable air-conditioning. A good sweat would be more beneficial, but people demand this cursed comfort.

I am waiting for Professor Cabrera.

Skulls taken from ancient graves around Ica stare out from the museum's showcases. They are deformed. The deforma-

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tions begin at the temples, then arch back upwards from the temples like the body of a hornet. The back part of the head often has three times the volume of a normal skull.

In erudite tomes I find this explanation of the monsters.

Inca priests selected boys at a very tender age and put their still malleable little heads between padded boards. Cords were pulled through hinges and slowly and steadily reduced the space between the boards. Some children must have suffered indescribable torments in the process, otherwise we should not have these deformed adult skulls.

The sight of these monstrous heads, which might have come from the Gothic novel *Frankenstein* by Mary Shelley (1797–1851), spurred me to ask questions.

Why did this agonising ritual take place?

How did men get the idea of deforming children's skulls? Skulls of this kind are no Peruvian or South American speciality. They are found among the Maya in Central America, in the north-west of the USA among the flathead Indians, as well as in ancient Egypt.[13]

The various peoples seem to have been copying something.

Is it true—after all, no one was there—that the deformed were chosen to become future priests and high priests? Why? Did children have to be misshapen so that their adult skulls would resemble those of the ancient gods? Did man once meet intelligent beings who inspired respect and strive to resemble them, externally at least? Were the priests using a barbarous trick to conjure up the omnipotence attributed to the vanished figures with these highly individual head masks? Did the priests mean these oversize skulls to show that they were different from the common people and formed an elite? Possibly, for their rituals are supposed to have taken place in secret. If these unpleasant relics of a brutal past were confined to the territory of a *single* people, special religious reasons might lie behind the custom, but they are found in widely separated regions on different continents. Was skull deformation practised to imitate the heads of alien beings seen

I photographed thase deformed skulls in the Museum of Ica. Have they anything to tell us?

by men when they visited the earth? Were deformed skulls intended to salvage something of the aura of the powerful masters in a distant future—at least visually? If only one of these questions could be answered affirmatively, these skulls could provide significant indications of the appearance of the extraterrestrials who blessed our forefathers with their presence in the very very distant past.

Professor Cabrera ended my meditations with warm torrential greetings in the best South American style. We drank a pisco sour and I showed him the photos of the hole-ridden band which ran through his homeland. He did not know it and was rather dubious when I assured him that it ran over hill and dale barely 100 km from Ica.

'In the Pisco valley? I know it well; I've flown over it many times. I know the Hacienda Montesierpe, too. But I've never seen this remarkable band,' Cabrera admitted.

He was still sceptical the next morning when we drove along the Panamericana to Pisco. Every time I drive through Pisco, my stomach rebels. Pisco stinks; I do not know any other town that sends up such noisome smells. A large fishing fleet is anchored in the harbour. The factories nearby are not manufacturing attar of roses, but malodorous fish manure. The 'aroma' of Pisco, a cloud of fish oil, also lingers loathsomely over the coast road. It reminded me of my childhood when my mother used to dose me with big spoonfuls of cod liver oil, because of the vitamins which children need for growth. Children are better off today; they swallow pleasant-tasting vitamin tablets. Hens are fed horrifying amounts of fish manure with the result that eggs and chicken meat taste fishy. In other parts of our humane world the idea of battery hens spoils my appetite for the chickens I once loved to eat, here the fish-hen smell did the trick.

It was a marvellous day with blue skies that raised my hopes of success. Four kilometres north of Pisco a rough road leads into the Pisco valley to Humay, then up into the high Andes to Castrovirreyna and Huancavelica. In the fields which are irrigated, fruit and vegetables thrive. The abrupt transition from desert to cultivated landscape and vice versa is consistently irritating. Rocky hills and sand dunes flanked the tortuous narrow road.

After 31 km we passed through the town of Humay and in

North of Pisco a dirt road leads into the Pisco valley and then upwards into tha high Andes.

five minutes we reached the Hacienda Montesierpe. We drove into the courtyard, which had seen better days. The former seignorial house had been turned into cottages. There was also a church, the roof of which had fallen in, and small statues with their heads lying in the mud. Paintings fluttered from the walls of the big house and the church. After the first land reform under the then socialist military government, when the owners were driven out, everything of any value went to rack and ruin. Only the most essential things were repaired. The Indians are as badly off as before the revolution. An unjust regime was overthrown, another one of the same calibre assumed power and the sufferer was the little man.

Brown-skinned children with large dark eyes crowded round us, wearing dresses and trousers that were too large or too small. They were ragged and pitifully dirty. The revolution promised a new paradise. Nothing has changed. Once again all that happened was a transfer of power.

Professor Cabrera went into the house and I followed him.

He showed my photos to a fat woman who was seated at a spinning-wheel. Next to her there was a huge pile of oranges above which tattered brightly coloured shirts were drying on clothes lines.

Cabrera and the woman fired salvoes of words at each other that my limited Spanish could not follow. He came back and said that the matron did not know it and had never seen anything like it. I remember Carlos Milla, the architect, and his claim that I would find my goal only 300 m from this hacienda. Surely the lady, who had certainly never left the place in her life, ought to have known about it.

A broken-down tractor rattled into the yard. Cabrera went straight to the two men and asked for information. I kept in the background, reading what was said and thought from their faces. At long last one of the two tractor drivers indicated that he knew something. With an infinitely tired gesture he pointed to the mountains behind the hacienda. Without waiting for Cabrera's news, I shouldered my cameras.

The cultivated land behind the hacienda is only a strip of 250 m. One after the other, we climbed the first hill on a narrow path and checked the countryside around us, but there was no sign of the band with the holes. We panted on. The sun was beating down and the air was oppressive.

We took a break and sat down. The light was glaring, the sun stood perpendicularly above us and there was hardly any shade. Nowadays I have problems with my eyes; they often hurt and cannot stand bright light. I sometimes think that it started this midday when I strained to find contours, points of reference and small hints in the blinding light. My eyes smarted then as they do today when I sit at my desk and write by the bright lamplight. Sometimes the lines blur and flicker like the slopes of the hills and the verges of the desert.

Did my eyes deceive me? In the shimmering iridescent air black stripes stood out on the other side of the valley, a black snake which clung to the hills. I said nothing, but took the tele-objective and checked my observation. It confirmed what I had seen with my bare eyes. Somewhere out of the distant haze the band crept over hill and dale to end in the area of cultivated land in the Pisco valley. In my mind I built up a further piture of the formation. An extension of it ought

Dark stripes stood out in the shimmering air. The band crawled towards us from the distance.

to lead in our direction. I handed the tele-objective to Cabrera and indicated the point he was to look at. He saw what I saw, I was sure of that.

We had to climb very steeply to get a better look. We panted. We clambered on to the ridge of the mountain. To our right and left there were nothing but arid valleys, scree, shimmering air and yet more scree which you could not take your eyes off. We stumbled. Then I stumbled into the first hole of the dark band . . .

I knew at once that this was it!

Professor Cabrera, the sceptic, scratched the back of his sweaty head, stared at the ground and said, 'Erich, we're here!'

The hole I stumbled over was one metre deep and one metre in diameter. Next to it there were a second, a third and fourth hole, a veritable band pierced with holes that unfolded into the distance as far as the eye could see. I looked up,

When I stood before the first hole in the ground, I knew that we had reached my goal.

followed the route taken by the holes and saw it disappear far above beyond the mountains.

Five hundred metres above the hacienda we stood by the foremost row of holes. All the holes were empty, except for a little crumbled scree. They were simply there, just as in my first impression from the old photos, like an exact pattern impressed into the earth by a rolling-pin. We followed the trail of holes upward, climbing the mountain like weary warriors, but secretly glad to have reached our goal.

Every time we went a little higher, the holes changed. More and more often they were surrounded by stones. Sometimes we saw little walls piled up around them. On the ridge of the mountain every hole was enclosed by a wall. In an endless line the holes clung to the sloping sides of a valley like a snakeskin. It looked as if Indian pioneers, acting on orders, had simultaneously dug into the ground, side by side on a band 24m wide. There was room for a man in each hole.

Had it been a defence installation? That was the first ques-

We followed the band as far as the eye could see. There was no end to it; it was simply swallowed up by the haze.

tion that suggested itself. It must have been a gigantic army with a wide, open flank over hills and valleys. That runs counter to any kind of rational strategy. The soldiers could not have harmed the attackers if they were cooped up in holes in the ground. The course taken by the bank also refutes the assumption of a defence installation. If it covered only the tops of hills and mountains it could have fulfilled a purpose. From above—if there was anything to defend up there—the attackers, fighting uphill, would have had to show themselves; they would have been within the field of vision. Major defence works such as the Inca wall in Peru and the famous Great Wall of China dominate mountain ridges. Logically. Mediaeval knights planted their castles on mountain tops from which any enemy in the valley was visible. None of that applies here, because the band with the holes often clings to the slopes in the valleys in gentle elegant curves. If the holes

had been one-man bunkers for defenders, they would often have been lower down than the onrushing enemy army.

So what purpose did the hundreds and thousands of holes fulfil? Clay soil which would have made digging child's play never existed here; the ground was always stony hard and dry. But why had men undertaken such strenuous work?

We crouched in the holes next to each other. We looked up the mountain and down into the valleys, following the band into the distance where the harsh shimmering heat haze swallowed it up.

Was it a burial place? It would be the only one in the world, laid out over many, many kilometres, whose graves were never discovered. Burial places always exhibit something that points to their purpose—memorial stones, the remains of bleached bones and funerary gifts. There was nothing up here to point in that direction.

Did the holes mark the territorial boundaries of some monarch or state? Even to primitive minds the cost of digging the holes would have been colossal. Stones placed next to each other would have served the purpose. Would men have also put boundary demarcations on the steep sides of valleys? Even a dictator, who forced his subjects to carry out this work, would have accepted the course of a river as a boundary. But the band with holes frequently runs along such slopes, now straight, now curved, an unparalleled infrastructure. It was certainly not a boundary line. So what was it?

Were signs set up here to form a line of signals? Can we imagine that on dark nights—on the birthday of a king or a priest—hundreds of thousands of Indians cowered in the holes and lit torches on the word of command? A chain of lights illuminated by the brilliance of the streets of Las Vegas? Come now, they did not need holes in the ground for that; all the Indians had to do was stand in line.

Are we dealing here with signs for the gods, as on the plain of Nazca, only 180 km to the south as the crow flies? Has the band as astronomically determined alignment? So far that has not been investigated. The old photographs from the *National Geographic* are forgotten, the band of holes is unknown. It is not mentioned in a single book. I am not sure whether the old photos slumber in the archives. Will they be given catalogue numbers and properly filed so that one day

they may inspire a young unblinkered archaeologist to inquire into the mystery of the Andes? I lack the means to finance the necessary research, but at least I have prepared the way for the unknown inquirer. He no longer has to waste time looking for the goal, he can follow the stretch that I have described.

Just before I left Ica, Professor Cabrera informed me that for centuries the natives have called the band *la avenida misteriosa de las picaduras de viruelas*, the mysterious avenue of the pockmarks.

The avenue really is mysterious. As I myself am uncertain what it is that runs over hill and dale in Peru as a sign of the past, I ask for suggested solutions. I shall eagerly read any hypothesis that reaches me at this address: CH-4532 Feldbrunnen SO, Baselstrasse 10, Switzerland.

Twilight of the gods?

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The present technical civilisation on our planet is not the first . . . (or)
A combination of both theories.

Membership of the AAS is open to everybody. A newsletter for members is published in English and German every two months. The AAS takes part in the organisation of expeditions and study journeys to archaeological and other sites of importance for the proof of the theory. A world congress takes place every year. Previous congresses were held in Chicago (1974), Zürich (1975), Crikvenica, Yugoslavia (1976), Rio de Janeiro (1977), Chicago (1978), Munich (1979), Auckland, New Zealand (1980), Vienna (1982).

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Most sincerely,
Erich von Däniken